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ATM/CABLE ARCH AND BEAM STRUCTURAL TEST PROGRAM

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16. ABSTRACT This report describes the structural testing of an Apollo Telescope Mount (ATM) Cable Arch and Beam Assembly. Static loads were applied to simulate the critical conditions expected during transportation and launch of the ATM.			
During the running of Test 4 a failure occurred in the fitting (MSFC drawing 30M16275-3) which, in the rack assembly, attaches the arch to the roll ring. Following installation of a redesigned part, the test was successfully rerun.			
All test objectives were met. Stress and deflection data show that the assembly is structurally adequate for use in the ATM.			
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TECHNICAL MEMORANDUM X-64657

ATM/CABLE ARCH AND BEAM STRUCTURAL TEST PROGRAM

INTRODUCTION

The Apollo Telescope Mount (ATM) Cable Arch and Beam is the structural assembly which provides support for electrical cables which run from the rack frame to equipment located in the canister. This report describes a series of structural tests performed on a Cable Arch and Beam Assembly to qualify its design for use in orbital missions.

Loads applied during these tests simulated the most severe conditions which are expected to occur during transportation of the ATM aboard the Super Guppy airplane and during launch of the Saturn V booster. Particular objectives were:

1. To verify the structural integrity of the Cable Arch and Beam Assembly.
2. To determine deflections and stresses occurring under maximum loading conditions and to determine the amount of permanent set after removal of loads.
3. To verify analytical methods used to predict stress levels and deflections.

These tests were performed in accordance with the document "Structural Test and Instrumentation Requirements for the ATM Cable Arch and Beam" issued by Analytical Mechanics Division, Astronautics Laboratory, Science and Engineering (S&E-ASTN-A).

TEST CONDITIONS

Four conditions of testing were performed under aircraft transportation conditions. The cases were:

1. Case 1 — High angle of attack; $\dot{x} = -3.95$, $\dot{z} = 0.242$, $\ddot{\Theta} = 0.0023$
2. Case 2 — Steady state floor vibration; $\dot{x} = -1.0$, $\dot{z} = 1.52$, $\ddot{\Theta} = 0.0223$

3. Case 3 — Steady state floor vibration; $\dot{x} = 1.0$, $\dot{z} = -1.52$,
 $\ddot{\Theta} = 0.0223$

4. Case 4 — Steady state floor vibration; $\dot{x} = -1.0$, $\dot{y} = 1.52$,
 $\ddot{\Theta} = 0.0223$,

and four conditions of testing were performed under flight conditions. The cases were:

5. Case 5 — Saturn 1-B Liftoff; $\dot{x} = 3.93$, $\dot{z} = 0.56$, $\ddot{\Theta} = -0.0053$

6. Case 6 — Saturn 1-B Liftoff; $\dot{x} = 3.93$, $\dot{z} = -0.56$, $\ddot{\Theta} = 0.0053$

7. Case 7 — Saturn 1-B Liftoff; $\dot{x} = 3.93$, $\dot{y} = 0.56$, $\ddot{\Theta} = 0.0053$

8. Case 8 — Saturn V maximum acceleration; $\dot{x} = 4.7$.

Accelerations, \dot{x} , \dot{y} , \dot{z} are in "g's". Angular acceleration, $\ddot{\Theta}$, is in radian/sec². Those not given are zero.

It will be noted that loads of cases 5, 6, and 7 are for flight onboard a Saturn IB on which the ATM was originally scheduled to be launched. These were used since the design was based on them and they were more severe than the corresponding Saturn V conditions.

Theoretical load values for each condition are given in Table 1. Loads were applied at the points shown in Figure 1.

TEST HARDWARE

Hardware for these tests was a structurally complete cable arch, roll adapter, and beam assembly as shown in Figure 2. Also refer to Marshall Space Flight Center (MSFC) drawings 10M22003, 10M24003, 30M16223, and 30M16224.

TEST SETUP

Tests were performed in the extension to the load test annex of building 4619, of the MSFC. The test hardware was located in a specially built test fixture (MSFC drawing 90M04402) which supported the beam at its four end points and the arch at its -X end (Figs. 2-4).

Loads were applied through hydraulic cylinders at the points shown in Figure 1 and were controlled by a load maintainer which allowed the required forces to be applied uniformly as percentage increments of limit levels.

INSTRUMENTATION

Instrumentation consisted of 25 electrical deflection indicators (EDI), 32 uniaxial strain gages, 20 triaxial strain gage rosettes and 10 load cells. The outputs of the transducers were monitored by a computer-controlled data acquisition system as schematically shown in Figure 5. This system was an analog to a digital conversion link between the test setup and a GE 235 computer which produced a printout of all transducer readings, in engineering units, within approximately 2 min of the time a data scan was requested.

Locations of the strain gages and deflection transducers are shown in Figure 6. Load cell locations are as shown in Figure 1. The polarity of the electrical deflection transducers and load cells was set such that a positive number in the computer printout indicates deflection or load in the directions shown.

TEST PROCEDURE

Before the running of each test, the load maintainers were pressure calibrated at the 100-percent level. During this operation, hydraulic lines going to the cylinders were blocked off so that the structure was not loaded.

Once calibration was completed and when the data system was ready, zero load conditions were obtained by pressurizing cylinders 1 and 5 to produce a lifting force equal to the dead weight of the test fixtures attached to the specimen. A zero reference scan was then made on the computer. Loads were then slowly applied to the 20-, 40- and 60-percent levels with a data scan being taken at each increment. While loads were being increased to these levels, hydraulic pressures were visually monitored to confirm that the applied loads were "in the ballpark".

At the 60-percent load level, the computer printout of load cell readings was reviewed by the test engineer and by a representative of Space Structure Section, Strength Analysis Branch, Analytical Mechanics Division, Astronautics Laboratory, Science and Engineering (S&E-ASTN-ASP) to verify that all loads were being applied in the right direction and that they were close to the right magnitude. Since strain gage data at this load level, in each case, indicated that stresses were of a relatively low level, and since the load maintainers control less accurately at lower pressures and tend to correct themselves as the calibration level is neared, no effort was made to fine tune the loads at the 60-percent level.

Once the 60-percent data were deemed acceptable, loading proceeded to the 80-percent level where another data scan was made and reviewed. Loads were then fine tuned by adjusting the hydraulic pressure in each cylinder which the printout showed to be applying a load significantly different than its correct load. After the necessary pressure changes were finished, an additional load scan was made. Loads were then raised to the next higher load increment.

This procedure was followed in each test case for raising loads to load levels of 80 percent or greater. For each case, data scans were taken and reviewed at the 0, 20, 40, 60, 80, 100, 110, 120 and 125 percent of limit load levels. Additional load scans were taken at levels requested by Strength Analysis Branch, Analytical Mechanics Division, Astronautics Laboratory, Science and Engineering (S&E-ASTN-AS), as shown in the printouts, while loads were being removed.

RESULTS

Tests 1, 2 and 3 were completed without failure. In each case, recorded stresses were well below the yield point of the material. Measured deflections, particularly lateral deflections of the arch, were several times greater than had been anticipated. Predictions furnished by S&E-ASTN-AS indicated that the maximum deflection occurring in any test would be about 0.457 cm (0.18 in.). Actual measured deflections exceeded 1.09 cm (0.43 in.) in each test. Data from these tests are shown in Tables 2-4.

During the running of Test 4 a failure occurred in the fitting (MSFC drawing 30M16275-3) which, in the rack assembly attaches the arch to the roll ring. In the setup for these tests, however, the roll ring was replaced by the test fixture. The failure, (Figs. 7-9), occurred after the 80 percent of limit data had been reviewed and accepted. Loads were being raised to the 100-percent level, but as the 98-percent level was reached the failure occurred. Since failure of this part was unexpected, it was not instrumented. Data from this test are given in Table 5.

The maximum stress recorded by any gage prior to (80 percent of limit) the failure was 1716 psi (gage 226). As in the other cases deflections were much higher than predicted with the highest deflection recorded at the 80-percent level being 3.0 cm (1.18 in.).

Another set of attachment fittings, identical to those used at the time of failure, was installed to allow the continuation of the test program while stronger parts were being designed and fabricated.

Load Cases 5, 6, 7 and 8, which produced a less severe reaction in these fittings, were then run. As before, measured stresses were low and deflections were high. During the first attempt to perform load conditions 5, it was noted that the portion of the test fixture to which the upper end of the arch was attached exhibited an excessive torsional deformation. Testing was stopped until reinforcement was made.

Case 5 was then rerun to completion. Comparison of data from these two runs indicate that deflections of the specimen in the latter case were lower by an average of approximately 15 percent. It may be concluded that deflections seen in the cases run earlier were similarly influenced by the stiffness of the test fixture. No attempt was made in the design of the test fixture to duplicate the stiffness of the roll ring or other rack attachment points.

Cases 6, 7 and 8 were run without incident. In each case stresses were low level, but deflections were higher than predicted.

S&E-ASTN-ASP requested that Case 4 be rerun with the old type fitting to determine if deflection of the test fixture caused a premature failure. During the second run, the fitting did, in fact, sustain a higher load, with failure occurring this time as the 110 percent of limit loads were being reviewed. The mode of failure was essentially identical to the previous failure (Figs. 10 and 11).

The redesigned fittings (MSFC drawing No. 30M18254) were then installed and successfully loaded to the 125 percent of limit load level.

A record of applied loads and resulting stresses and deflections is given in Tables 2-11.

CABLE-ARCH LOAD DEFLECTION TESTS

Following completion of the transportation and flight load cases, tests were performed at the request of the Development Section, Structural Development Branch, Engineering Division, Astronautics Laboratory, Science and Engineering (S & E -ASTN-ESD) to determine spring rates of the cable arch.

For these test the fixtures were modified as shown in Drawing 90M04483 and Figure 12. This setup provided for loading the roll ring end of the arch in either the radial or longitudinal direction. Rollers bearing against two sides of the loading plate limited the direction of motion of the arch end to that of the applied load.

Incremental loads were applied by adding precalibrated weights to a cable attached to the end of the loading plate. Data from three mechanical deflection indicators were recorded manually at each load increment.

A record of applied loads and resulting deflections is given in Tables 12 and 13.

TABLE 1. LIMIT LOAD VALUES (100 PERCENT)

Load Point	Load Case							
	1	2	3	4	5	6	7	8
1	-1576	-399	-399	-399	1568	1568	1568	1876
2	0	0	0	1318	0	0	397	0
3	188	1328	-1328	0	397	-397	0	0
4	-300	-102	69	-75	289	301	295	353
5	-1283	-616	0	-315	1166	1310	1238	1480
6	0	0	0	453	0	0	205	0
7	0	0	0	210	0	0	0	0
8	97	666	-666	0	204	-204	0	0
9	0	0	0	344	0	0	127	0
10	58	395	-395	0	127	-127	0	0

Note: Positive directions are as shown in Figure 1. (Loads are in pounds.)

TABLE 2. TEST DATA, LOAD CASE 1

ATM CABLE ARCH AND BEAM STRUCTURAL CASE 1 337001 1-18-71				LOAD CELLS IN POUNDS FINAL PRINT			
DATE NUM	SCAN 006	SCAN 007	SCAN 009	SCAN 010	SCAN 012	SCAN 013	SCAN 015
* LOAD	000	040	060	080	100	110	120
PSI	000	000	000	000	000	000	000
001	0	-	469	-	925	-	1,254
002	0	0	0	0	0	-	1,557
003	-	3	21	59	90	149	0
004	0	-	61	119	180	243	191
005	0	-	447	499	750	1,004	299
006	-	0	0	0	0	0	1,255
007	-	0	0	0	0	0	1,414
008	0	-	11	23	42	60	0
009	0	-	0	0	0	0	100
010	0	-	13	13	24	44	48

ATM CABLE ARCH AND BEAM STRUCTURAL CASE 1 337001 1-18-71				LOAD CELLS IN POUNDS FINAL PRINT			
DATE NUM	SCAN 016	SCAN 019	SCAN 020	SCAN 020	SCAN	SCAN	SCAN
* LOAD	110	900	900	000			
PSI	000	000	000				
001	-	1,750	-	992	-	54	
002	0	0	0	0	-		
003	220	142	142	1			
004	-	333	7	192	-	11	
005	-	1,413	7	775	-	15	
006	-	0	0	0	-		
007	0	-	0	0	-		
008	132	79	79	0	-		
009	0	-	0	0	-		
010	67	50	50	10	-		

TABLE 2. (Continued)

GAGE NO.		SCAN 008		SCAN 009		SCAN 010		SCAN 011		SCAN 012		SCAN 013		SCAN 015		SCAN 016		SCAN 017		
X	LOAD PSI	Y	LOAD PSI	Y																
-101	-	0.00002	0.00019	0.00053	0.00092	0.00126	0.00162	0.00188	0.00203	0.00212	-	-	-	-	-	-	-	-	-	-
-102	-	0.00000	-	0.00046	-	0.00778	-	0.1186	-	0.1593	-	0.1982	-	0.2237	-	0.2422	-	0.2534	-	-
-103	-	0.00003	-	0.00036	-	0.00778	-	0.1162	-	0.1654	-	0.2069	-	0.2341	-	0.2547	-	0.2660	-	-
-104	-	0.00002	-	0.00059	-	0.00720	-	0.1104	-	0.1326	-	0.1919	-	0.2159	-	0.2340	-	0.2459	-	-
-105	-	0.00002	-	0.00043	-	0.00808	-	0.1221	-	0.1683	-	0.2099	-	0.2364	-	0.2566	-	0.2684	-	-
-106	-	0.00000	-	0.00035	-	0.00850	-	0.2689	-	0.3686	-	0.4638	-	0.5271	-	0.5770	-	0.6033	-	-
-107	-	0.00006	-	0.00028	-	0.01786	-	0.2606	-	0.3563	-	0.4482	-	0.5104	-	0.5584	-	0.5847	-	-
-108	-	0.00000	-	0.00054	-	0.01835	-	0.2663	-	0.3625	-	0.4632	-	0.5280	-	0.5799	-	0.6071	-	-
-109	-	0.00000	-	0.00044	-	0.00048	-	0.0070	-	0.0111	-	0.0179	-	0.0243	-	0.0401	-	0.0528	-	-
-110	-	0.00000	-	0.00054	-	0.01372	-	0.2011	-	0.2730	-	0.3438	-	0.3902	-	0.4263	-	0.4461	-	-
-111	-	0.00000	-	0.00032	-	0.01334	-	0.1955	-	0.2683	-	0.3376	-	0.3846	-	0.4207	-	0.4406	-	-
-112	-	0.00000	-	0.00022	-	0.01321	-	0.1968	-	0.2691	-	0.3397	-	0.3879	-	0.4259	-	0.4450	-	-
-113	-	0.00000	-	0.00079	-	0.0113	-	0.0128	-	0.0139	-	0.0137	-	0.0121	-	0.0111	-	0.0104	-	-
-114	-	0.00000	-	0.00017	-	0.00802	-	0.0210	-	0.0330	-	0.0429	-	0.0490	-	0.0510	-	0.0510	-	-
-115	-	0.00000	-	0.00063	-	0.0023	-	0.0166	-	0.0410	-	0.0577	-	0.0698	-	0.0780	-	0.0836	-	-
-116	-	0.00000	-	0.00078	-	0.00229	-	0.0020	-	0.0289	-	0.0409	-	0.0499	-	0.0537	-	0.0592	-	-
-117	-	0.00003	-	0.00094	-	0.0143	-	0.0158	-	0.0161	-	0.0146	-	0.0120	-	0.0105	-	0.0097	-	-
-118	-	0.00003	-	0.00023	-	0.0032	-	0.0070	-	0.0271	-	0.0379	-	0.0479	-	0.0534	-	0.0581	-	-
-119	-	0.00002	-	0.00043	-	0.0037	-	0.0058	-	0.0234	-	0.0324	-	0.0408	-	0.0450	-	0.0484	-	-
-120	-	0.00012	-	0.00021	-	0.0006	-	0.0109	-	0.0303	-	0.0389	-	0.0483	-	0.0526	-	0.0582	-	-
-121	-	0.00000	-	0.00056	-	0.0079	-	0.0087	-	0.0102	-	0.0093	-	0.0084	-	0.0076	-	0.0067	-	-
-122	-	0.00000	-	0.00041	-	0.0026	-	0.0029	-	0.0033	-	0.0047	-	0.0024	-	0.0024	-	0.0021	-	-
-123	-	0.00000	-	0.00062	-	0.0110	-	0.0083	-	0.0030	-	0.0059	-	0.0105	-	0.0119	-	0.0140	-	-
-124	-	0.00000	-	0.00098	-	0.0085	-	0.0016	-	0.0056	-	0.0074	-	0.0111	-	0.0116	-	0.0132	-	-
-125	-	0.00002	-	0.00053	-	0.0078	-	0.0092	-	0.0095	-	0.0095	-	0.0085	-	0.0083	-	0.0080	-	-
-126	-	0.00002	-	0.00055	-	0.0004	-	0.0002	-	0.0007	-	0.0013	-	0.0027	-	0.0027	-	0.0032	-	-
-127	-	0.00000	-	0.00145	-	0.0328	-	0.0480	-	0.0605	-	0.0755	-	0.0844	-	0.0922	-	0.0962	-	-
-128	-	0.00002	-	0.00161	-	0.0346	-	0.0482	-	0.0596	-	0.0754	-	0.0861	-	0.0934	-	0.0994	-	-
-129	-	0.00002	-	0.0007	-	0.0019	-	0.0023	-	0.0025	-	0.0019	-	0.0016	-	0.0023	-	0.0021	-	-

TABLE 2. (Continued)

ATM CABLE-ARCH AND BEAM STRUCTURAL CASE 1 337001 1-18-71						DISPLACEMENT POTS			FINAL PRINT	
GAPE NUM	SCAN 018	SCAN 019	SCAN 020	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN
% LOAD	110	080	060	040	020	010	005	002	001	
PSI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.01	-	0.0215	-	0.0166	-	0.0050	-	-	-	
1.02	-	0.02294	-	0.01407	-	0.0159	-	-	-	
1.03	-	0.02417	-	0.01483	-	0.0206	-	-	-	
1.04	-	0.02216	-	0.01338	-	0.0163	-	-	-	
1.05	-	0.02433	-	0.01202	-	0.0210	-	-	-	
1.06	-	0.02562	-	0.01392	-	0.01885	-	-	-	
1.07	-	0.02392	-	0.01324	-	0.016	-	-	-	
1.08	-	0.02592	-	0.01362	-	0.0156	-	-	-	
1.09	-	0.02502	-	0.01211	-	0.0135	-	-	-	
1.10	-	0.024074	-	0.012293	-	0.0132	-	-	-	
1.11	-	0.024023	-	0.012261	-	0.0141	-	-	-	
1.12	-	0.024072	-	0.012287	-	0.0154	-	-	-	
1.13	-	0.024091	-	0.012090	-	0.0083	-	-	-	
1.14	-	0.02519	-	0.012420	-	0.0076	-	-	-	
1.15	-	0.024785	-	0.012424	-	0.0063	-	-	-	
1.16	-	0.02554	-	0.01266	-	0.0137	-	-	-	
1.17	-	0.025070	-	0.01266	-	0.015	-	-	-	
1.18	-	0.02592	-	0.012406	-	0.0035	-	-	-	
1.19	-	0.02507	-	0.01340	-	0.0000	-	-	-	
1.20	-	0.02589	-	0.01400	-	0.0009	-	-	-	
1.21	-	0.024064	-	0.0164	-	0.0035	-	-	-	
1.22	-	0.024006	-	0.0106	-	0.006	-	-	-	
1.23	-	0.024197	-	0.01184	-	0.0041	-	-	-	
1.24	-	0.024183	-	0.0146	-	0.0009	-	-	-	
1.25	-	0.024060	-	0.01035	-	0.0004	-	-	-	
1.26	-	0.024036	-	0.0134	-	0.0007	-	-	-	
1.27	-	0.0240803	-	0.01385	-	0.0012	-	-	-	
1.28	-	0.0240847	-	0.0117	-	0.0041	-	-	-	
1.29	-	0.024011	-	0.0118	-	0.0025	-	-	-	

TABLE 2. (Continued)

ATM CABLE, ARCH AND BEAM STRUCTURAL CASE 1 337001 1-18-71									
GAGE NUM		SCAN 005		SCAN 007		SCAN 009		SCAN 011	
% LOAD	000	000	000	000	000	000	000	000	000
PSI	000	000	000	000	000	000	000	000	000
301	42	188	-	377	586	816	962	1,109	1,193
302	21	-	335	-	523	-	837	-	1,025
303	-	146	314	460	649	795	921	-	1,025
304	-	426	-	314	-	690	-	983	-
305	0	168	356	544	732	879	-	983	1,067
306	63	-	188	335	586	795	-	1,151	-
307	0	167	-	335	628	816	1,088	-	1,234
308	42	199	-	418	649	909	-	1,088	-
309	-	21	64	188	335	502	670	-	1,213
310	0	-	188	377	586	795	-	983	-
311	0	450	481	690	921	1,130	-	1,088	-
312	21	0	-	84	-	377	586	-	1,297
313	0	309	481	711	-	983	1,193	-	1,318
314	21	-	402	272	-	660	828	-	1,213
315	0	84	230	398	-	544	649	-	1,318
316	21	-	472	460	-	793	-	1,004	-
317	21	42	126	209	-	314	377	-	1,025
318	21	146	293	377	-	502	628	-	1,025
319	42	63	188	356	523	607	690	-	1,025
320	63	105	230	319	418	639	795	-	1,025
321	21	-	493	460	-	711	858	-	1,130
322	21	-	461	460	-	711	941	-	1,172
323	0	-	146	230	-	418	607	-	795
324	63	-	146	293	-	439	690	-	921
325	0	-	121	21	-	21	69	-	921
326	21	0	-	126	-	146	-	-	983
327	21	-	42	126	-	105	-	94	-
328	21	-	21	21	-	63	-	42	-
329	-	21	0	0	-	146	-	63	-
330	21	-	21	0	-	21	0	0	21
331	42	0	-	21	0	84	21	84	42
332	0	84	21	0	-	63	42	42	84

TABLE 2. (Continued)

ALM CABLE ARCH AND BEAM STRUCTURAL CASE 1 337001 4-18-71						SINGLE STRAIN GAGES			FINAL PRINT	
gate num	scan 018	scan 019	scan 020	scan	scan	scan	scan	scan	scan	scan
% load	110	960	900							
psi	000	000	000							
201	-	1,067	-	628	-	21				
202	-	1,941	-	523	-	21				
203	-	983	-	523	-	42				
204	-	962	-	523	-	42				
205	-	983	-	523	-	0				
206	-	1,030	-	670	-	42				
207	-	1,193	-	670	-	42				
208	-	1,213	-	711	-	0				
209	-	1,732	-	335	-	21				
210	-	1,109	-	928	-	42				
211	-	1,297	-	795	-	105				
212	-	858	-	356	-	670				
213	-	1,381	-	916	-	42				
214	-	900	-	390	-	63				
215	-	792	-	514	-	42				
216	-	1,402	-	658	-	105				
217	-	1,439	-	488	-	42				
218	-	670	-	639	-	21				
219	-	670	-	451	-	209				
220	-	416	-	63	-	291				
221	-	1,234	-	649	-	105				
222	-	1,318	-	732	-	64				
223	-	795	-	481	-	63				
224	-	983	-	607	-	0				
225	-	105	-	105	-	84				
226	-	42	-	63	-	105				
227	-	0	-	84	-	105				
228	-	272	-	472	-	146				
229	-	84	-	21	-	63				
230	-	42	-	63	-	42				
231	-	21	-	105	-	42				
232	-	84	-	92	-	0				

TABLE 2. (Continued)

ATM CABLE LENGTH AND BEAM STRESS		CASE 1 - 35/001 1-10-71						RECTANGULAR ROSETTES			FINAL PRINT	
YARD-SEG	SCAN 005	SCAN 007	SCAN 009	SCAN 010	SCAN 012	SCAN 013	SCAN 015	SCAN 016	SCAN 017	SCAN 018	SCAN 019	
% LOAD	000	000	000	000	000	000	000	000	000	000	000	
PSI	000	000	000	000	000	000	000	000	000	000	000	
.001	-	47	422	448	658	983	1,259	1,424	1,571	1,639	-	
.002	-	12	60	145	216	297	364	418	490	488	-	
.003	-	16	81	151	221	343	447	503	541	577	-	
.004	-	45	75	86	88	85	85	85	85	84	-	
.005	-	71	92	55	35	90	94	147	156	129	-	
.006	-	102	145	367	291	590	748	803	823	941	-	
.007	-	87	113	211	267	340	406	475	479	535	-	
.008	-	42	26	32	21	17	18	14	12	14	-	
.009	-	31	66	498	759	1,086	1,330	1,469	1,616	1,684	-	
.010	-	31	109	158	240	413	594	750	799	828	-	
.011	-	0	79	170	259	336	393	469	509	513	-	
.012	-	43	72	85	85	85	82	83	83	82	-	
.013	-	9	123	52	138	117	63	203	148	226	-	
.014	-	40	492	322	249	693	823	921	1,077	1,086	-	
.015	-	25	65	135	205	289	370	359	350	429	-	
.016	-	36	7	18	16	15	19	14	17	14	-	
.017	-	36	415	649	1,051	1,464	1,873	2,128	2,269	2,396	-	
.018	-	98	34	38	74	98	126	162	136	162	-	
.019	-	11	174	305	488	683	874	973	1,067	1,118	-	
.020	-	67	91	84	84	83	83	83	83	83	-	
.021	-	32	45	166	236	300	404	448	448	520	-	
.022	-	94	467	646	794	1,136	1,439	1,613	1,613	1,893	-	
.023	-	63	111	240	279	418	518	582	642	667	-	
.024	-	45	22	16	11	110	8	9	10	10	-	
.025	-	110	348	723	1,092	1,542	1,912	2,189	2,379	2,487	-	
.026	-	12	69	214	344	543	552	622	682	698	-	
.027	-	47	130	254	374	679	784	848	895	-	-	
.028	-	42	83	77	83	83	85	85	85	85	-	
.029	-	15	465	156	309	458	581	619	660	744	-	
.030	-	47	345	565	909	1,291	1,603	1,885	1,932	2,035	-	
.031	-	16	385	209	300	416	512	583	636	645	-	
.032	-	0	111	110	7	5	5	5	5	5	-	
.033	-	27	61	90	136	135	115	64	127	141	-	
.034	-	42	4	90	909	1,926	1,944	2,442	2,747	3,198	-	
.035	-	11	404	409	645	944	1,165	1,342	1,665	1,514	-	
.036	-	67	9	1	1	1	1	1	2	2	-	
.037	-	62	420	435	634	923	1,163	1,333	1,415	1,551	-	
.038	-	32	34	23	109	148	197	219	291	-	-	
.039	-	0	126	201	290	407	507	568	603	630	-	
.040	-	49	90	84	84	85	86	85	86	85	-	
.041	-	9	68	211	300	481	591	667	749	773	-	
.042	-	40	256	976	1,911	2,111	2,994	2,988	3,229	3,780	-	
.043	-	25	244	383	605	815	1,001	1,159	1,249	1,303	-	
.044	-	9	7	5	5	5	5	5	5	5	-	
.045	-	7	471	540	768	1,054	1,379	1,453	1,689	1,992	-	
.046	-	149	92	115	139	193	307	327	369	372	-	
.047	-	71	145	213	315	429	536	583	630	630	-	
.048	-	42	92	89	84	86	86	86	89	89	-	

TABLE 2. (Continued)

ATW CABLE ARCH AND BEAM STRUCTURE CASE 1 337001 1-18-71				RECTANGULAR ROSETTES			FINAL PRINT	
GATE NUM	SCAN 018	SCAN 019	SCAN 020	SCAN	SCAN	SCAN	SCAN	SCAN
% LOAD	110 PSI	060 PSI	000 PSI	000	000	000	000	000
101	1,527	928	96	96				
102	972	323	-	34				
103	528	256	-	65				
104	-	83	6	-	63			
105	-	110	126	-	277			
106	-	859	466	67				
107	485	281	105					
108	1,531	493	6	219				
109	623	610	-	0				
110	454	256	-	110				
111	-	86	6	-	34			
112	-	203	16	-	9			
113	-	921	78	-	93			
114	-	359	167	22				
115	-	142	1	-	22			
116	-	998	276	96				
117	-	83	6	-	84			
118	-	463	41	40				
119	-	2,061	362	-	71			
120	-	599	337	-	56			
121	-	12	1	-	49			
122	-	2,258	8,432	-	105			
123	-	678	383	-	74			
124	-	790	421	-	90			
125	-	84	92	-	37			
126	-	624	343	-	61			
127	-	1,780	988	-	30			
128	-	578	269	-	46			
129	-	135	8	-	75			
130	-	2,894	2,710	-	184			
131	-	1,379	666	-	184			
132	-	2	2	-	10			
133	-	1,366	806	76				
134	-	195	96	-	44			
135	-	585	355	-	60			
136	-	87	35	-	78			
137	-	717	156	-	38			
138	-	3,093	2,953	-	233			
139	-	1,188	749	103				
140	-	3	2	-	2			
141	-	1,538	1,633	-	154			
142	-	330	160	-	29			
143	-	601	486	92				
144	-	87	66	-	75			

TABLE 2. (Continued)

ATM CABLE, ARCH AND BEAM STRUCTURAL CASE 1 337001 1-18-71		RECTANGULAR ROSETTES FINAL PRINT							
GAFFE NUM	SCAN 006	SCAN 007	SCAN 009	SCAN 010	SCAN 012	SCAN 013	SCAN 015	SCAN 016	SCAN 017
% LOAD PSI	000 000	000 000	040 000	060 000	080 000	100 000	110 000	120 000	125 000
337	103	-	165	-	259	-	720	-	975
338	53	-	366	-	647	-	1,139	-	2,127
339	25	400	194	308	497	644	743	792	825
340	-	30	67	74	-	73	-	72	73
341	78	960	883	861	982	967	1,099	1,095	1,110
342	16	415	303	389	979	657	775	941	888
343	47	412	290	236	201	155	162	127	111
344	-	43	22	25	18	19	12	13	4
345	9	-	152	-	250	-	356	-	603
346	-	40	441	-	687	-	1,018	-	1,920
347	16	-	161	323	469	628	751	869	976
348	16	10	24	21	0	28	61	68	39
349	90	-	103	167	235	300	345	400	445
350	16	0	0	66	-	67	-	67	67
351	-	31	31	35	83	111	102	207	167
352	45	-	60	77	72	84	-	84	87
353	-	4	76	87	149	212	204	276	267
354	27	-	44	56	-	96	-	58	80
355	22	-	60	71	103	134	142	167	174
356	-	23	69	87	79	88	-	86	87
357	22	-	40	4	35	44	61	90	111
358	-	22	67	61	22	13	15	9	17
359	-	27	31	44	102	105	116	135	127
360	11	-	51	44	-	39	-	35	115
	-	23	0	0	22	-	13	-	13

TABLE 2. (Concluded)

GRADE NUM	ATM CABLE ARCH AND BEAM SITUATIONAL CASE 1 337001 1-18-71			RECTANGULAR ROSETTES			FINAL POINT		
	SCAN 018	SCAN 019	SCAN 020	SCAN 021	SCAN 022	SCAN 023	SCAN 024	SCAN 025	SCAN 026
% LOAD	110	000	000	000	000	000	000	000	000
PSI	000	000	000	000	000	000	000	000	000
337	-	1,119	-	151	-	16	-	-	-
338	-	2,059	-	3,716	-	328	-	-	-
339	-	770	-	483	-	156	-	-	-
340	-	73	-	75	-	70	-	-	-
341	-	1,137	-	1,167	-	1,262	-	-	-
342	-	169	-	493	-	512	-	-	-
343	-	11	-	18	-	24	-	-	-
344	-	956	-	966	-	97	-	-	-
345	-	2,385	-	3,294	-	372	-	-	-
346	-	715	-	3,64	-	138	-	-	-
347	-	12	-	12	-	15	-	-	-
348	-	954	-	268	-	175	-	-	-
349	-	108	-	36	-	75	-	-	-
350	-	423	-	456	-	50	-	-	-
351	-	67	-	69	-	54	-	-	-
352	-	217	-	173	-	53	-	-	-
353	-	61	-	48	-	9	-	-	-
354	-	139	-	140	-	22	-	-	-
355	-	87	-	79	-	81	-	-	-
356	-	121	-	71	-	88	-	-	-
357	-	28	-	40	-	25	-	-	-
358	-	75	-	56	-	57	-	-	-
359	-	9	-	22	-	62	-	-	-
360	-	154	-	154	-	49	-	-	-
	-	92	-	92	-	18	-	-	-
	-	123	-	123	-	33	-	-	-
	-	20	-	20	-	22	-	-	-

TABLE 3. TEST DATA, LOAD CASE 2

ATM CABLE ARCH AND BEAM STRUCTURAL CASE 2 337002 1-18-71									
LOAD CELLS IN POUNDS FINAL PRINT									
GAGE NUM	SCAN 021	SCAN 022	SCAN 023	SCAN 024	SCAN 026	SCAN 028	SCAN 029	SCAN 031	SCAN 032
X LOAD	000	000	000	040	060	080	100	110	120
PSI	000	000	000	000	000	000	000	000	000
001	-	2	-	21	-	93	-	180	-
002	-	4	-	0	-	47	-	509	-
003	-	4	-	0	-	47	-	509	-
004	-	0	-	0	-	29	-	49	-
005	-	0	-	0	-	407	-	229	-
006	-	0	-	0	-	0	-	0	-
007	-	0	-	0	-	0	-	0	-
008	-	0	-	0	-	0	-	0	-
009	-	0	-	0	-	0	-	0	-
010	-	0	-	59	-	131	-	260	-

ATM CABLE ARCH AND BEAM STRUCTURAL CASE 2 337002 1-18-71									
LOAD CELLS IN POUNDS FINAL PRINT									
GAGE NUM	SCAN 033	SCAN 034	SCAN 035	SCAN 036	SCAN 037	SCAN 038	SCAN 039	SCAN 040	SCAN 041
X LOAD	110	000	000	000	000	000	000	000	000
PSI	060	060	060	060	060	060	060	060	060
001	-	472	-	439	-	65	-	1	-
002	-	1	-	1	-	1	-	1	-
003	-	3,476	-	798	-	4	-	4	-
004	-	129	-	66	-	11	-	11	-
005	-	697	-	366	-	14	-	14	-
006	-	0	-	0	-	0	-	0	-
007	-	0	-	0	-	0	-	0	-
008	-	763	-	802	-	2	-	2	-
009	-	0	-	0	-	0	-	0	-
010	-	497	-	495	-	-	-	-	-

TABLE 3. (Continued)

CASE-NUM		SCANT-021	SCANT-022	SCANT-023	SCANT-024	SCANT-025	DISPLACEMENT-PUTS	FINAL-PRINT	SCAN-031	SCAN-032
X-POWD	PSI	000	000	000	000	000	000	000	110	120
201	0*00002	0*00048	0*0056	0*0079	0*0114	0*0145	0*0147	0*0164	-	0*0162
202	0*00000	0*00096	0*0230	0*0360	0*0598	0*0739	0*0821	0*0911	-	0*0911
203	-	0*00044	-	0*0197	0*0290	0*0490	0*0673	0*0754	-	0*0867
204	0*00003	-	0*0042	0*0159	0*0265	0*0461	0*0664	0*0743	-	0*0857
205	0*00002	-	0*0056	-	0*0177	0*0310	0*0418	0*0699	-	0*0890
206	0*00000	-	0*0008	0*0559	0*0890	0*1317	0*1782	0*1952	-	0*2238
207	0*00000	-	0*0176	-	0*0511	0*0826	0*1254	0*1702	-	0*2139
208	0*00000	-	0*0149	-	0*0492	0*0828	0*1279	0*1792	-	0*2224
209	0*00002	-	0*0005	0*0000	0*0000	0*0044	0*0044	0*0044	-	0*0024
210	0*00000	-	0*0167	-	0*0445	0*0706	0*1025	0*1387	-	0*1713
211	0*0004	-	0*0466	-	0*0463	0*0751	0*1103	0*1492	-	0*1843
212	0*00000	-	0*0149	-	0*0044	0*0673	0*1023	0*1384	-	0*1751
213	0*00002	0*0011	-	0*0339	-	0*0047	0*0047	0*0016	-	0*0026
214	0*00000	0*0067	-	0*0940	0*1392	0*1937	0*2219	0*2799	-	0*3107
215	-	0*0002	0*0322	0*0999	0*1467	0*2037	0*2619	0*2875	-	0*3208
216	0*00015	-	0*0537	0*0995	0*1441	0*1976	0*2924	0*2759	-	0*3079
217	0*0003	0*0094	-	0*1111	0*126	0*0105	0*067	0*0059	-	0*035
218	0*0003	0*0095	-	0*1173	0*1605	0*2982	0*3370	0*3764	-	0*307
219	0*0002	0*0330	-	0*1092	0*1659	0*2343	0*3037	0*3356	-	0*3865
220	0*0003	0*0606	-	0*1230	0*1863	0*2619	0*3379	0*3726	-	0*4041
221	0*0003	0*0335	-	0*0882	0*102	0*0114	0*0172	0*0297	-	0*2143
222	0*0003	0*0018	-	0*0041	0*0053	0*0059	0*0328	0*0328	-	0*322
223	-	0*0002	0*0456	0*0986	0*1530	0*2198	0*2856	0*3165	-	0*3652
224	0*0002	0*0144	-	0*1052	0*1592	0*2225	0*2860	0*3196	-	0*3628
225	0*0000	0*0027	-	0*0042	0*0044	0*0064	0*0062	0*0069	-	0*1118
226	0*0002	0*0004	-	0*0003	0*0004	0*0004	0*0004	0*0004	-	0*0004
227	0*0000	0*149	-	0*0360	0*0574	0*0659	0*1114	0*1250	-	0*1450
228	0*0002	0*188	-	0*0419	0*0650	0*0908	0*1144	0*1277	-	0*1463
229	0*0002	0*0002	-	0*0004	0*0011	-	0*0044	-	0*0049	-
									-	0*0058

TABLE 3. (Continued)

LINE NUM	SCAN 033	SCAN 034	SCAN 035	DISPLACEMENT POTS			FINAL PRINT		
				LOAD PSI	110 000	080 080	000 000	SCAN	SCAN
1.01	-	0.0145	-	-	-	-	-	-	-
1.02	-	0.0089	-	0.00712	-	0.0094	-	-	-
1.03	-	0.0821	-	0.0438	-	0.0110	-	-	-
1.04	-	0.0812	-	0.0453	-	0.0103	-	-	-
1.05	-	0.0837	-	0.0460	-	0.0116	-	-	-
1.06	-	0.02077	-	0.01158	-	0.0196	-	-	-
1.07	-	0.01984	-	0.01077	-	0.0220	-	-	-
1.08	-	0.02055	-	0.01116	-	0.0219	-	-	-
1.09	-	0.00922	-	0.00412	-	0.0046	-	-	-
1.10	-	0.01299	-	0.00879	-	0.0125	-	-	-
1.11	-	0.01727	-	0.00935	-	0.0134	-	-	-
1.12	-	0.01610	-	0.00856	-	0.0152	-	-	-
1.13	-	0.00926	-	0.00405	-	0.0005	-	-	-
1.14	-	0.03011	-	0.01824	-	0.0234	-	-	-
1.15	-	0.01117	-	0.00683	-	0.0145	-	-	-
1.16	-	0.02991	-	0.01638	-	0.0190	-	-	-
1.17	-	0.00923	-	0.00453	-	0.0029	-	-	-
1.18	-	0.04055	-	0.02396	-	0.0172	-	-	-
1.19	-	0.03642	-	0.02437	-	0.0216	-	-	-
1.20	-	0.04035	-	0.02111	-	0.02752	-	-	-
1.21	-	0.02137	-	0.01201	-	0.01692	-	-	-
1.22	-	0.01301	-	0.01433	-	0.01295	-	-	-
1.23	-	0.0427	-	0.01780	-	0.0090	-	-	-
1.24	-	0.03406	-	0.02003	-	0.0166	-	-	-
1.25	-	0.0106	-	0.00332	-	0.0005	-	-	-
1.26	-	0.00072	-	0.00005	-	0.0009	-	-	-
1.27	-	0.01378	-	0.00794	-	0.0024	-	-	-
1.28	-	0.01406	-	0.00840	-	0.0084	-	-	-
1.29	-	0.0071	-	0.0057	-	0.0009	-	-	-

TABLE 3. (Continued)

TABLE 3. (Continued)

ATM CABLE ARCH AND BEAM STRUCTURAL CASE 2 337002 1-18-71						SINGLE STRAIN GAUGES			FINAL PRINT	
GAGE NUM	SCAN 033	SCAN 034	SCAN 035	SCAN 036	SCAN 037	SCAN	SCAN	SCAN	SCAN	SCAN
% LOAD	110 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000	000	000	000	000
201	356	-	409	-	21					
202	-	481	-	146	84					
203	-	502	-	451	21					
204	-	230	-	105	21					
205	-	272	-	167	0					
206	-	1,234	-	907	21					
207	-	607	-	372	-	42				
208	-	396	-	167	63					
209	-	272	-	42	-	21				
210	-	377	-	493	63					
211	-	502	-	377	42					
212	-	439	-	230	-	167				
213	-	626	-	463	-	42				
214	-	293	-	146	0					
215	-	223	-	293	0					
216	-	1,339	-	793	126					
217	-	816	-	436	-	42				
218	-	921	-	490	21					
219	-	1,569	-	658	63					
220	-	1,234	-	670	64					
221	-	1,620	-	625	-	105				
222	-	1,467	-	711	-	188				
223	-	941	-	314	314					
224	-	1,674	-	679	109					
225	-	84	-	105	21					
226	-	1,297	-	711	0					
227	-	1,339	-	795	63					
228	-	230	-	146	63					
229	-	502	-	451	0					
230	-	418	-	421	42					
231	-	209	-	126	-	42				
232	-	939	-	421	84					

TABLE 3. (Continued)

KIN-CABINET AND BEAM STIMMIGRATIONAL CASE 2		KIN-CABINET AND BEAM STIMMIGRATIONAL CASE 2		RECTANGULAR ROSETTES		FINAL ELEM.	
GAUGE-NUM	SCAN 021	SCAN 022	SCAN 023	SCAN 024	SCAN 025	SCAN 026	SCAN 027
X LOAD	000	080	040	060	080	100	120
PSI	000	080	040	060	080	100	120
401	96	443	572	791	1,175	1,511	1,745
402	29	161	147	277	262	321	314
403	35	74	213	307	456	590	700
404	53	-	89	89	89	89	89
405	-	142	-	187	-	265	-
406	103	-	201	10	577	765	-
407	25	44	92	186	-	1,052	-
408	-	22	30	34	250	356	465
409	4	189	478	744	1,067	1,480	1,644
410	11	-	116	162	214	363	417
411	16	95	181	291	412	559	614
412	37	-	95	95	97	90	90
413	U	435	907	1,366	1,954	2,471	2,720
414	63	-	61	39	107	158	199
415	31	404	423	663	923	1,207	1,331
416	42	69	69	69	69	65	65
417	40	-	54	-	163	240	-
418	9	-	82	82	83	1,226	-
419	35	974	814	1,315	1,861	2,431	2,627
420	35	193	194	278	356	473	496
421	35	139	330	519	752	979	1,066
422	32	162	84	85	87	80	80
423	47	-	132	-	239	-	429
424	15	271	-	611	979	1,312	1,619
425	9	-	115	236	370	516	695
426	53	-	95	126	283	323	-
427	22	195	-	17,061	-	2,363	3,172
428	67	7	10	110	1,716	1,020	1,298
429	-	628	619	946	1,330	1,662	1,810
430	107	-	9	97	106	199	199
431	27	34	-	126	443	612	756
432	-	603	-	1,761	-	415	635
433	11	484	393	632	897	1,145	1,264
434	72	413	675	1,070	1,502	1,866	2,068
435	22	193	199	304	434	507	580
436	25	110	238	383	534	679	741
437	54	79	66	65	63	63	62

TABLE 3. (Continued)

22	-	0.6	48
23	-	0.6	49
24	-	0.6	50
25	-	0.6	51
26	-	0.6	52
27	-	0.6	53
28	-	0.6	54
29	-	0.6	55
30	-	0.6	56
31	-	0.6	57
32	-	0.6	58
33	-	0.6	59
34	-	0.6	60
35	-	0.6	61
36	-	0.6	62
37	-	0.6	63
38	-	0.6	64
39	-	0.6	65
40	-	0.6	66
41	-	0.6	67
42	-	0.6	68
43	-	0.6	69
44	-	0.6	70
45	-	0.6	71
46	-	0.6	72
47	-	0.6	73
48	-	0.6	74
49	-	0.6	75
50	-	0.6	76
51	-	0.6	77
52	-	0.6	78
53	-	0.6	79
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55	-	0.6	81
56	-	0.6	82
57	-	0.6	83
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61	-	0.6	87
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63	-	0.6	89
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75	-	0.6	101
76	-	0.6	102
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81	-	0.6	107
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89	-	0.6	115
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92	-	0.6	118
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96	-	0.6	122
97	-	0.6	123
98	-	0.6	124
99	-	0.6	125
100	-	0.6	126
101	-	0.6	127
102	-	0.6	128
103	-	0.6	129
104	-	0.6	130
105	-	0.6	131
106	-	0.6	132
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111	-	0.6	137
112	-	0.6	138
113	-	0.6	139
114	-	0.6	140
115	-	0.6	141
116	-	0.6	142
117	-	0.6	143
118	-	0.6	144
119	-	0.6	145
120	-	0.6	146
121	-	0.6	147
122	-	0.6	148
123	-	0.6	149
124	-	0.6	150
125	-	0.6	151
126	-	0.6	152
127	-	0.6	153
128	-	0.6	154
129	-	0.6	155
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133	-	0.6	159
134	-	0.6	160
135	-	0.6	161
136	-	0.6	162
137	-	0.6	163
138	-	0.6	164
139	-	0.6	165
140	-	0.6	166
141	-	0.6	167
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143	-	0.6	169
144	-	0.6	170
145	-	0.6	171
146	-	0.6	172
147	-	0.6	173
148	-	0.6	174
149	-	0.6	175
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153	-	0.6	179
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201	-	0.6	227
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204	-	0.6	230
205	-	0.6	231
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208	-	0.6	234
209	-	0.6	235
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218	-	0.6	244
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222	-	0.6	248
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225	-	0.6	251
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229	-	0.6	255
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254	-	0.6	280
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266	-	0.6	292
267	-	0.6	293
268	-	0.6	294
269	-	0.6	295
270	-	0.6	296
271	-	0.6	297
272	-	0.6	298
273	-	0.6	299
274	-	0.6	300
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276	-	0.6	302
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361	-	0.6	387
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369	-	0.6	395
370	-	0.6	396
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373	-	0.6	399
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383	-	0.6	409
384	-	0.6	410
385	-	0.6	411
386	-	0.6	412
387	-	0.6	413
388	-	0.6	414
389	-	0.6	415
390	-	0.6	416
391	-	0.6	417
392	-	0.6	418
393	-	0.6	4

TABLE 3. (Continued)

RECTANGULAR ROSETTES FINAL PRINT											
SPANNING LENGTH	SCANNED 021	SCANNED 022	SCANNED 023	SCANNED 024	SCANNED 025	SCANNED 026	SCANNED 027	SCANNED 028	SCANNED 029	SCANNED 031	SCANNED 032
PSI	000	000	040	060	080	100	110	120	122	000	000
337	9	-	924	-	1,080	-	2,602	-	3,443	-	4,253
338	40	-	925	-	1,980	-	3,254	-	4,674	-	6,908
339	25	-	900	-	1,450	-	724	-	1,036	-	1,522
340	36	-	67	-	72	-	73	-	74	-	1,727
341	0	-	243	-	561	-	875	-	1,290	-	1,74
342	0	-	67	-	187	-	251	-	447	-	740
343	0	-	165	-	374	-	563	-	869	-	1,239
344	45	-	56	-	96	-	99	-	98	-	1,331
345	58	-	486	-	785	-	1,310	-	1,925	-	2,617
346	30	-	692	-	1,692	-	2,696	-	3,615	-	5,283
347	11	-	198	-	448	-	673	-	995	-	1,333
348	23	-	5	-	7	-	7	-	9	-	1,507
349	29	-	902	-	735	-	1,145	-	1,865	-	2,403
350	47	-	40	-	108	-	136	-	229	-	313
351	25	-	150	-	313	-	504	-	803	-	1,045
352	81	-	77	-	76	-	75	-	73	-	1,137
353	47	-	143	-	345	-	541	-	849	-	1,101
354	78	-	16	-	30	-	53	-	66	-	148
355	16	-	60	-	157	-	244	-	390	-	476
356	43	-	94	-	94	-	89	-	96	-	131
357	40	-	165	-	323	-	549	-	777	-	958
358	9	-	9	-	42	-	49	-	98	-	84
359	25	-	67	-	182	-	299	-	418	-	521
360	9	-	67	-	86	-	88	-	88	-	87
361	27	-	49	-	93	-	121	-	160	-	215
362	18	-	62	-	62	-	69	-	117	-	153
363	11	-	33	-	78	-	105	-	148	-	184
364	67	-	22	-	22	-	6	-	16	-	10
365	0	-	35	-	89	-	84	-	211	-	201
366	0	-	35	-	69	-	69	-	116	-	138
367	0	-	35	-	89	-	100	-	148	-	169
368	0	-	35	-	22	-	22	-	22	-	11
369	0	-	35	-	22	-	22	-	22	-	11
370	0	-	35	-	22	-	22	-	22	-	11

TABLE 3. (Concluded)

DATE NUM	ATM CABLE ARCH AND BEAM STRUCTURAL CASE 2 337002 1-18-74			RECTANGULAR ROSETTES FINAL PRINT		
	SCAN 033	SCAN 034	SCAN 035	SCAN	SCAN	SCAN
X LOAD PSI	110 000	080 000	060 000	SCAN	SCAN	SCAN
337	-	4,110	-	2,410	-	40
338	-	7,444	-	7,066	-	85
339	-	1,667	-	928	22	
	-	74	-	74	-	67
340	-	1,931	-	1,049	-	10
341	-	1,010	-	693	-	321
342	-	1,541	-	971	256	
	-	60	-	61	-	67
343	-	3,113	-	1,903	-	105
344	-	6,348	-	6,425	-	136
345	-	1,617	-	911	120	
	-	6	-	6	-	6
346	-	2,819	-	1,496	-	119
347	-	926	-	822	-	6
348	-	1,196	-	637	57	
	-	74	-	70	-	62
349	-	1,275	-	950	0	
350	-	160	-	68	-	3
351	-	559	-	491	31	
	-	83	-	69	-	45
352	-	1,203	-	622	127	
353	-	49	-	28	-	2
354	-	625	-	325	-	65
	-	87	-	87	-	38
355	-	285	-	122	-	15
356	-	223	-	123	-	47
357	-	254	-	136	-	16
	-	11	-	13	-	45
358	-	334	-	156	72	
359	-	146	-	62	22	
360	-	240	-	112	25	
	-	16	-	20	-	54

TABLE 4. TEST DATA, LOAD CASE 3

AIN CABLE ARCH AND BEAM STRUCTURAL CASE 3 337003 1-19-71		LOAD CELLS IN POUNDS FINAL PRINT								
SCANE NUM	SCAN 011	SCAN 002	SCAN 003	SCAN 004	SCAN 005	SCAN 007	SCAN 008	SCAN 009	SCAN 011	
X LOAD	000	000	040	060	080	100	110	120	120	
PSI	000	000	000	000	000	000	000	000	000	
001	0	-	133	-	245	-	350	-	461	-
002	0	-	0	-	0	-	0	-	0	-
003	-	2	449	-	508	-	769	-	1,026	-
004	0	-	16	-	27	-	43	-	1,321	-
005	-	0	0	-	0	-	56	-	75	-
006	0	-	0	-	0	-	0	-	0	-
007	0	-	0	-	0	-	0	-	0	-
008	-	0	529	-	255	-	390	-	520	-
009	0	-	0	-	0	-	0	-	0	-
010	-	1	64	-	140	-	220	-	297	-

AIN CABLE ARCH AND BEAM STRUCTURAL CASE 3 337003 1-19-71		LOAD CELLS IN POUNDS FINAL PRINT					
SCANE NUM	SCAN 012	SCAN 013	SCAN 014	SCAN	SCAN	SCAN	SCAN
X LOAD	110	000	000	000	000	000	000
PSI	000	000	000	000	000	000	000
001	-	489	-	474	-	8	-
002	-	1	0	0	-	1	-
003	-	1,483	-	903	0	0	-
004	-	82	-	52	0	0	-
005	-	0	-	0	0	0	-
006	-	0	-	0	0	0	-
007	-	0	-	0	0	0	-
008	-	732	-	294	7	0	-
009	-	0	-	0	0	0	-
010	-	439	-	429	-	2	-

TABLE 4. (Continued)

TABLE 4. (Continued)

ATM CABLE ARCH AND BEAM STRUCTURAL CASE 3 337003 1-19-71		DISPLACEMENT POTS			FINAL PRINT	
GATE NUM	SCAN 014	SCAN 013	SCAN 014	SCAN	SCAN	SCAN
X-LOAD PSI	110 000	060 000	000 000	SCAN	SCAN	SCAN
101	070094	070085	-	0.0007		
102	-	070752	-	0.0017		
103	-	070153	-	0.0019	-	0.0020
104	-	070418	-	0.0087	-	0.0014
105	-	070471	-	0.00324	-	0.0024
106	-	070763	-	0.00295	-	0.00318
107	-	070700	-	0.00253	-	0.00310
108	-	070879	-	0.00240	-	0.00313
109	-	070070	-	0.00082	-	0.00063
110	-	070493	-	0.00028	-	0.00177
111	-	070265	-	0.000297	-	0.00148
112	-	070315	-	0.000386	-	0.00192
113	-	070018	-	0.00046	-	0.00021
114	-	070306	-	0.00195	-	0.0034
115	-	0703040	-	0.01956	-	0.00515
116	-	0703070	-	0.01993	-	0.00522
117	-	0700076	-	0.00102	-	0.00012
118	-	0704091	-	0.002422	-	0.00446
119	-	0703693	-	0.002015	-	0.00408
120	-	0704138	-	0.02364	-	0.00415
121	-	070166	-	0.00457	-	0.00035
122	-	070109	-	0.00097	-	0.0024
123	-	0703602	-	0.02096	-	0.0319
124	-	0703646	-	0.02429	-	0.0303
125	-	070027	-	0.00048	-	0.00021
126	-	070040	-	0.00041	-	0.00018
127	-	0701600	-	0.01011	-	0.00092
128	-	0704952	-	0.01421	-	0.0107
129	-	070044	-	0.00011	-	0.00002

TABLE 4. (Continued)

PAGE NUM	SINGLE STRAIN STAGES						FINAL PHASE			
	SCAN 001	SCAN 002	SCAN 003	SCAN 004	SCAN 005	SCAN 006	SCAN 007	SCAN 008	SCAN 009	SCAN 010
* LOAD	000	020	040	060	080	000	100	110	120	125
PSI	000	000	000	000	000	000	000	000	000	000
201	-	84	0	21	84	126	146	188	239	272
202	0	-	126	-	42	-	84	-	126	-
203	-	42	-	42	42	42	42	42	63	84
204	0	-	84	-	126	-	251	-	293	-
205	-	63	293	418	586	753	900	962	1,088	1,172
206	0	-	409	398	523	628	816	837	795	921
207	0	-	63	-	42	-	21	0	42	42
208	-	63	108	126	251	-	314	-	335	-
209	0	-	126	-	126	-	126	-	84	105
210	-	21	-	251	-	335	-	398	-	323
211	0	-	21	272	293	356	398	418	460	544
212	0	-	149	167	146	167	167	209	226	167
213	0	-	126	146	146	209	272	251	272	293
214	-	0	-	0	-	21	-	84	-	63
215	0	-	21	63	209	356	582	649	753	774
216	-	63	-	21	105	209	293	418	481	460
217	0	-	165	-	167	-	230	-	335	-
218	-	21	-	42	146	-	188	-	272	-
219	0	-	409	-	398	-	670	-	921	-
220	-	0	-	67	-	293	-	569	-	1,318
221	0	-	126	377	544	795	921	1,094	1,046	1,130
222	-	21	-	346	314	523	690	879	1,025	1,067
223	0	-	230	544	879	1,276	1,548	1,797	1,925	2,092
224	-	63	-	293	565	837	1,234	1,674	1,841	1,988
225	0	-	21	21	63	146	167	105	188	2134
226	-	63	-	16	-	293	-	670	-	898
227	0	-	167	-	314	-	439	-	628	-
228	-	42	-	42	-	628	-	816	-	941
229	0	-	63	-	21	-	146	188	272	335
230	-	21	-	63	146	-	251	314	481	502
231	0	-	0	-	84	-	146	209	251	356
232	-	42	-	42	-	126	-	167	-	377
					105	-	188	291	-	418
					-	-	377	-	-	460

TABLE 4. (Continued)

ATM CABLE ARCH AND BEAM STRUCTURAL CASE 3 337003 1-19-71						SINGLE STRAIN GAGES			FINAL PRINT	
GAGE NUM	SCAN 012	SCAN 013	SCAN 014	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN
% LOAD	110 000	060 000	060 000	000 000	000 000	000 000	000 000	000 000	000 000	000 000
201	-	209	-	84	-	84	-	-	-	-
202	-	105	-	167	-	63	-	-	-	-
203	-	84	-	105	-	0	-	-	-	-
204	-	293	-	120	-	42	-	-	-	-
205	-	1,046	-	649	-	42	-	-	-	-
206	-	774	-	714	-	42	-	-	-	-
207	-	84	-	84	-	42	-	-	-	-
208	-	418	-	314	-	21	-	-	-	-
209	-	42	-	84	-	0	-	-	-	-
210	-	460	-	395	-	0	-	-	-	-
211	-	544	-	377	-	42	-	-	-	-
212	-	209	-	120	-	84	-	-	-	-
213	-	272	-	209	-	0	-	-	-	-
214	-	120	-	66	-	0	-	-	-	-
215	-	795	-	498	-	21	-	-	-	-
216	-	460	-	368	-	42	-	-	-	-
217	-	460	-	351	-	0	-	-	-	-
218	-	314	-	146	-	21	-	-	-	-
219	-	1,276	-	711	-	21	-	-	-	-
220	-	753	-	377	-	42	-	-	-	-
221	-	962	-	616	-	146	-	-	-	-
222	-	962	-	598	-	42	-	-	-	-
223	-	1,674	-	628	-	209	-	-	-	-
224	-	2,778	-	1,322	-	84	-	-	-	-
225	-	146	-	105	-	21	-	-	-	-
226	-	753	-	472	-	63	-	-	-	-
227	-	900	-	639	-	21	-	-	-	-
228	-	251	-	135	-	22	-	-	-	-
229	-	460	-	251	-	42	-	-	-	-
230	-	314	-	26	-	21	-	-	-	-
231	-	251	-	126	-	42	-	-	-	-
232	-	377	-	197	-	84	-	-	-	-

TABLE 4. (Continued)

ATM TABLE - ARCH AND BEAM STRUCTURE, CASE 3		337003		1-19-71		RECTANGULAR ROSETTES		FINAL PRINT		
STATION NUMBER	SCANN 001	SCANN 002	SCANN 003	SCANN 004	SCANN 005	SCANN 006	SCANN 007	SCANN 008	SCANN 009	SCANN 010
LOAD	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI
401	103	74	28	46	51	22	-	35	-	3
402	93	49	31	29	738	-	928	-	1,089	-
403	26	90	184	296	395	475	527	-	1,252	-
404	-	8	-	10	13	12	-	12	-	612
405	44	107	181	232	303	503	547	-	12	-
406	49	18	-	13	-	35	-	79	-	10
407	44	44	103	122	178	269	313	-	245	-
408	67	67	61	67	67	64	-	64	-	67
409	22	53	72	128	152	174	-	192	-	311
410	22	403	272	469	597	888	-	839	-	1,094
411	22	25	100	168	222	357	323	-	389	-
412	-	67	9	22	19	22	24	21	-	19
413	-	27	49	138	195	243	333	303	-	289
414	-	96	18	79	99	73	-	33	-	18
415	-	35	33	60	70	103	130	178	-	200
416	-	110	69	78	77	74	77	67	-	67
417	-	15	29	65	35	21	-	71	-	36
418	-	110	408	715	1,038	1,395	-	1,865	-	2,399
419	-	47	489	325	511	708	897	1,010	-	1,181
420	-	45	22	318	320	0	1	112	-	2
421	-	72	23	20	510	790	948	1,112	-	1,245
422	-	25	71	164	20	93	20	13	-	35
423	-	9	07	92	67	82	83	54	-	605
424	-	40	14	76	200	196	290	256	-	358
425	-	9	49	61	967	1,238	1,646	2,805	-	2,109
426	-	25	142	268	394	560	678	775	-	876
427	-	36	3	2	1	2	-	3	-	2
428	-	4	165	368	593	675	927	963	-	1,036
429	-	27	6	69	63	74	135	130	-	88
430	-	11	67	149	265	301	396	417	-	474
431	-	67	61	84	-	87	87	87	-	87
432	-	24	311	679	1,140	1,515	1,975	2,174	-	2,988
433	-	26	32	39	78	13	23	12	-	67
434	-	40	139	320	581	750	976	1,081	-	1,260
435	-	18	62	78	58	78	80	79	-	79
436	-	49	35	10	94	117	117	88	-	125
437	-	33	49	498	-	1,061	-	1,673	-	1,687
438	-	33	101	224	364	483	617	692	-	781
439	-	22	19	6	21	1	9	1	-	9
440	-	53	63	714	1,087	1,494	1,997	2,173	-	2,517
441	-	9	73	130	131	224	252	231	-	231
442	-	22	160	292	416	615	873	971	-	1,143
443	-	67	70	74	74	73	73	72	-	73
444	-	4	97	144	-	156	271	-	483	-
445	-	27	46	574	-	843	1,166	1,647	-	1,961
446	-	11	75	215	344	448	557	627	-	727
447	-	67	-	12	-	8	9	9	-	8

TABLE 4. (Continued)

PAGE NUM	ATM GABBLE ARCH AND BEAM STRUCTURAL CASE 3 337003 1-19-71			RECTANGULAR ROSETTES			FINAL PRINT		
	SCAN 012	SCAN 013	SCAN 014	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN
N LOAD	110	000	000	000	000	000	000	000	000
PSI	000	000	000	000	000	000	000	000	000
301	-	33	-	65	-	66	-	-	-
302	-	1795	-	234	-	4	-	-	-
303	-	564	-	900	-	35	-	-	-
304	-	11	-	12	-	32	-	-	-
305	-	565	-	176	-	44	-	-	-
306	-	84	-	21	-	44	-	-	-
307	-	225	-	413	-	44	-	-	-
308	-	210	-	90	-	67	-	-	-
309	-	942	-	279	-	63	-	-	-
310	-	366	-	445	-	31	-	-	-
311	-	21	-	22	-	45	-	-	-
312	-	350	-	163	-	49	-	-	-
313	-	7	-	39	-	40	-	-	-
314	-	178	-	101	-	25	-	-	-
315	-	69	-	71	-	9	-	-	-
316	-	6	-	19	-	13	-	-	-
317	-	27053	-	1037	-	112	-	-	-
318	-	1,023	-	556	-	50	-	-	-
319	-	0	-	1	-	9	-	-	-
320	-	1,019	-	919	-	40	-	-	-
321	-	1,019	-	941	-	49	-	-	-
322	-	19	-	19	-	18	-	-	-
323	-	563	-	428	-	33	-	-	-
324	-	92	-	62	-	67	-	-	-
325	-	304	-	435	-	9	-	-	-
326	-	1,019	-	927	-	40	-	-	-
327	-	759	-	916	-	25	-	-	-
328	-	2	-	3	-	36	-	-	-
329	-	948	-	233	-	40	-	-	-
330	-	89	-	29	-	9	-	-	-
331	-	433	-	452	-	25	-	-	-
332	-	2,294	-	88	-	81	-	-	-
333	-	2,29	-	442	-	6	-	-	-
334	-	1,112	-	537	-	119	-	-	-
335	-	79	-	60	-	57	-	-	-
336	-	120	-	50	-	62	-	-	-
337	-	1,073	-	919	-	40	-	-	-
338	-	677	-	924	-	25	-	-	-
339	-	2,110	-	74	-	67	-	-	-
340	-	2,162	-	211	-	53	-	-	-
341	-	269	-	163	-	9	-	-	-
342	-	997	-	524	-	22	-	-	-
343	-	73	-	74	-	0	-	-	-
344	-	456	-	245	-	0	-	-	-
345	-	1,730	-	636	-	63	-	-	-
346	-	637	-	405	-	31	-	-	-
347	-	9	-	6	-	0	-	-	-

TABLE 4. (Continued)

ALM CABLE ARCH AND BEAM STRUCTURAL CASE 3 337003 1-19-71		RECTANGULAR ROSETTES FINAL PRINT									
GAGE NUM	SCAN 001	SCAN 002	SCAN 003	SCAN 004	SCAN 005	SCAN 006	SCAN 007	SCAN 008	SCAN 009	SCAN 010	SCAN 011
X LOUD PSI	000 000	080 080	040 000	060 000	080 000	100 000	110 000	120 000	125 000		
837	103	662	1,888	2,881	3,905	5,116	5,678	6,233	6,546		
838	32	793	1,078	1,953	2,090	2,628	2,909	3,132	3,228		
839	25	159	405	664	907	1,244	1,384	1,549	1,659		
-	54	10	15	18	17	16	15	15	15		
840	40	21	117	180	155	115	44	46	46		
841	9	439	523	899	1,217	1,770	1,918	2,170	2,327		
842	25	130	320	540	686	942	981	1,093	1,124		
-	81	32	33	30	27	26	24	23	24		
843	49	672	1,498	2,391	3,183	4,184	4,570	4,981	5,255		
844	-	18	369	782	1,231	1,626	2,092	2,269	2,514		
845	33	142	358	580	779	1,046	1,150	1,233	1,305		
-	22	90	86	84	86	85	86	87	87		
846	9	58	165	239	339	400	476	536	566		
847	-	40	340	678	1,109	1,335	1,942	2,179	2,307		
848	25	145	257	433	598	771	852	901	948		
-	54	11	14	14	13	12	11	10	11		
849	50	22	61	68	91	120	72	57	120		
850	-	24	439	650	909	1,254	1,240	1,442	1,504		
-	40	67	189	291	409	567	584	692	692		
851	-	6	0	1	0	2	2	1	0		
852	-	80	18	20	30	48	101	138	154		
853	19	205	394	624	829	1,101	1,106	1,247	1,346		
854	33	111	207	327	436	601	622	700	737		
-	23	4	4	3	3	3	3	3	3		
855	-	30	9	15	12	83	125	46	142		
856	-	61	23	172	168	207	281	327	350		
857	46	22	79	90	145	203	186	236	245		
-	30	67	72	71	70	72	76	72	69		
858	-	9	9	21	2	111	111	146	146		
859	-	53	23	115	185	174	211	272	278		
860	-	22	22	68	92	142	179	194	164		
-	22	67	72	73	87	87	82	79	80		

TABLE 4. (Concluded)

AIM CABLE ARCH AND BEAM SINGULAR CASE 3 337003 1-19-71		RECTANGULAR ROSETTES		FINAL PRINT	
GATE NUM	SCAN 012	SCAN 013	SCAN 014	SCAN	SCAN
8 LOAD	110	000	000		
PSI	000	000	000		
437	2,645	0,405	265		
438	2,772	2,535	16		
439	1,522	0,685	124		
	10	10	9		
440	-	39	124	-	201
441	2,716	2,450	263		
442	1,038	0,63	33		
	25	-	67		
443	0,715	0,915	134		
444	2,542	2,350	84		
445	1,187	0,932	25		
	87	65	-	36	
446	-	472	276	-	13
447	2,183	2,423	80		
448	056	0,473	33		
	9	11	-	23	
449	-	152	76	-	66
450	-	1,347	736	-	4
451	098	0,30	35		
	0	0	-	32	
452	171	05	40		
453	1,139	027	9		
454	055	0,46	25		
	2	1	-	36	
455	156	76	-	27	
456	012	0,69	98		
457	234	0,22	35		
	67	07	-	58	
458	102	09	-	9	
459	256	031	23		
460	180	120	22		
	78	78	67		

TABLE 5. TEST DATA, LOAD CASE 4, FIRST RUN

MIN CABLE, ARCH AND BEAM STRENGTHENING CASE 4 337004 1-20-74									
LOAD CELLS IN POUNDS FINAL PRINT									
DATE/NIN	SCAN 019	SCAN 019	SCAN 016	SCAN 016	SCAN 017	SCAN 017	SCAN 018	SCAN 018	SCAN 019
PSI	000	000	000	000	000	000	000	000	000
001	1	-	63	-	137	-	216	-	305
002	0	1	47	0	97	77	101	1,034	-
003	-	0	1	0	0	-	0	0	1
004	-	0	9	-	24	-	40	56	0
005	-	1	57	-	118	-	181	244	114
006	-	0	70	-	157	244	322	322	2
007	0	0	42	67	67	142	156	156	2
008	-	0	0	-	0	-	0	0	0
009	-	0	96	153	0	241	329	329	2
010	0	0	0	0	0	0	0	0	0

MIN CABLE, ARCH AND BEAM STRENGTHENING CASE 4 337004 1-20-74									
DISPLACEMENT POTS FINAL PRINT									
DATE/NIN	SCAN 019	SCAN 019	SCAN 016	SCAN 016	SCAN 017	SCAN 017	SCAN 018	SCAN 018	SCAN 019
PSI	000	000	000	000	000	000	000	000	000
101	00000	000416	000427	000427	000623	000623	000828	000828	000828
102	00000	000000	000000	000000	000000	000000	000000	000000	000000
103	00000	000000	000000	000000	000000	000000	000000	000000	000000
104	000002	000002	000002	000002	000019	000019	00032	00032	00032
105	00000	00000	000025	000025	00037	00037	00037	00037	00037
106	00000	00000	000000	000000	000281	000281	000291	000291	000291
107	00000	00000	000000	000000	000615	000615	000615	000615	000615
108	00000	00000	000000	000000	000176	000176	00023	00023	00023
109	00003	00003	000000	000000	000697	000697	00376	00376	00376
110	00002	00002	000000	000000	00107	00107	00371	00371	00371
111	00000	00000	000003	000003	000456	000456	000666	000666	000666
112	00002	00002	000000	000000	00053	00053	00029	00029	00029
113	00004	00004	000000	000000	00213	00213	00605	00605	00605
114	00000	00000	000000	000000	00200	00200	00200	00200	00200
115	00000	00000	000000	000000	00216	00216	00216	00216	00216
116	00003	00003	000000	000000	00059	00059	00139	00139	00139
117	00002	00002	000000	000000	00105	00105	00105	00105	00105
118	00003	00003	000000	000000	00135	00135	00332	00332	00332
119	00000	00000	000002	000002	00223	00223	00294	00294	00294
120	00000	00000	000000	000000	00086	00086	00133	00133	00133
121	00003	00003	000000	000000	00197	00197	00305	00305	00305
122	00000	00000	000000	000000	00255	00255	00374	00374	00374
123	00000	00000	000000	000000	00490	00490	00819	00819	00819
124	00000	00000	000000	000000	00134	00134	00208	00208	00208
125	00000	00000	000000	000000	00065	00065	00162	00162	00162
126	00002	00002	000000	000000	00202	00202	00339	00339	00339
127	00000	00000	000000	000000	00089	00089	00211	00211	00211
128	00000	00000	000000	000000	01326	01326	03149	03149	03149
129	00000	00000	000000	000000	00072	00072	00108	00108	00108

TABLE 5. (Continued)

ALM CABLE ARCH AND BEAM STRUCTURAL CASE 4 337004 1-20-71		SINGLE STRAIN GAGES FINAL PRINT										
GAUGE NUM	SCAN 019	SCAN 015	SCAN 016	SCAN 017	SCAN 018	SCAN 020	SCAN 021					
PSI	000 000	000 000	040 000	060 000	080 000	098 000	098 000					
301	-	42	-	167	-	209	-	251	-	293	-	146
302	-	0	-	430	-	439	-	649	-	897	-	63
303	-	21	-	472	-	460	-	649	-	837	-	84
304	-	0	-	326	-	167	-	251	-	314	-	84
305	-	42	-	114	-	502	-	690	-	856	-	84
306	-	0	-	409	-	188	-	126	-	197	-	42
307	-	0	-	430	-	335	-	460	-	502	-	63
308	-	42	-	918	-	793	-	1,025	-	1,360	-	146
309	-	21	-	230	-	377	-	481	-	607	-	42
310	-	0	-	472	-	418	-	386	-	711	-	230
311	-	42	-	372	-	460	-	690	-	658	-	251
312	-	21	-	472	-	439	-	944	-	916	-	293
313	-	21	-	451	-	523	-	795	-	1,046	-	230
314	-	21	-	551	-	481	-	670	-	983	-	42
315	-	21	-	189	-	293	-	377	-	439	-	84
316	-	42	-	167	-	251	-	398	-	460	-	293
317	-	0	-	21	-	63	-	146	-	293	-	230
318	-	0	-	42	-	42	-	84	-	103	-	209
319	-	0	-	126	-	377	-	607	-	900	-	795
320	-	21	-	64	-	230	-	377	-	481	-	670
321	0	-	126	-	314	-	398	-	460	-	418	
322	0	-	21	-	21	-	84	-	167	-	105	
323	42	-	105	-	209	-	272	-	377	-	272	
324	0	-	21	-	42	-	84	-	333	-	272	
325	21	-	105	-	335	-	418	-	335	-	335	
326	0	-	499	-	649	-	1,193	-	1,716	-	398	
327	0	-	493	-	649	-	637	-	1,004	-	251	
328	0	-	63	-	293	-	795	-	1,318	-	481	
329	42	-	146	-	314	-	481	-	1,544	-	502	
330	-	21	0	21	-	21	0	-	63	-	126	
331	-	42	42	63	0	0	-	-	105	-	544	
332	42	-	63	396	795	1,7213	-	-	314	-	-	

TABLE 5. (Continued)

ATM CABINET, ARCH AND BEAM STRUCTURAL CASE 4 337004 1-70-71										REGULAR ROSETTES			FINAL PRINT	
PAGE NUMBER	SCANNED 015	SCANNED 019	SCANNED 016	SCANNED 018	SCANNED 017	SCANNED 019	SCANNED 020	SCANNED 021	SCANNED 022	SCANNED 023	SCANNED 024	SCANNED 025		
PSI	000	000	000	000	000	000	000	000	000	000	000	000		
801	4	-	60	40	38	109	-	256	-	-	-	-		
802	-	60	777	727	-	1,225	-	1,733	-	2,867	-	-		
803	-	35	198	383	-	1,632	-	921	-	1,306	-	-		
804	-	32	87	80	-	81	-	92	-	79	-	-		
805	-	4	127	283	-	464	-	742	-	1,255	-	-		
806	-	27	64	65	-	183	-	96	-	97	-	-		
807	-	11	96	174	-	323	-	414	-	599	-	-		
808	-	6	90	96	-	36	-	24	-	30	-	-		
809	-	31	102	648	-	1,032	-	1,477	-	2,272	-	-		
810	-	31	73	71	-	132	-	241	-	8	-	-		
811	-	31	115	289	-	436	-	618	-	1,132	-	-		
812	-	16	8	9	-	11	-	11	-	11	-	-		
813	-	10	0	0	-	29	-	13	-	111	-	-		
814	-	16	91	92	-	105	-	349	-	642	-	-		
815	-	15	91	87	-	158	-	216	-	376	-	-		
816	-	32	99	244	-	403	-	607	-	723	-	-		
817	-	40	91	83	-	93	-	92	-	68	-	-		
818	-	9	111	116	-	113	-	210	-	439	-	-		
819	-	25	79	272	-	219	-	709	-	914	-	-		
820	-	91	93	194	-	316	-	459	-	626	-	-		
821	-	16	68	151	-	281	-	419	-	746	-	-		
822	-	90	27	31	-	32	-	33	-	28	-	-		
823	-	31	76	141	-	232	-	294	-	962	-	-		
824	-	32	41	104	-	219	-	341	-	371	-	-		
825	-	40	41	119	-	198	-	341	-	412	-	-		
826	-	9	63	151	-	272	-	419	-	626	-	-		
827	-	25	94	201	-	318	-	420	-	272	-	-		
828	-	38	77	28	-	39	-	58	-	63	-	-		
829	-	47	76	137	-	56	-	136	-	16	-	-		
830	-	47	43	74	-	149	-	167	-	107	-	-		
831	-	47	44	106	-	103	-	191	-	144	-	-		
832	-	49	67	78	-	7	-	22	-	22	-	-		
833	-	40	76	183	-	217	-	230	-	93	-	-		
834	-	25	109	234	-	408	-	520	-	186	-	-		
835	-	25	116	35	-	98	-	145	-	139	-	-		
836	-	37	22	32	-	32	-	321	-	82	-	-		
837	-	55	222	324	-	364	-	489	-	85	-	-		
838	-	60	113	106	-	130	-	145	-	85	-	-		
839	-	46	81	77	-	77	-	81	-	81	-	-		

TABLE 5. (Concluded)

ALM CABLE ARCH AND BEAM SUBSTRUCTURAL CASE # 337004 1-20-71						RECTANGULAR ROSETTES			FINAL PRINT	
SCANE NUM	SCAN 014	SCAN 015	SCAN 016	SCAN 017	SCAN 018	SCAN 020	SCAN 021	SCAN 022	SCAN 023	
X LOAD	000	020	040	060	080	080	080	080	080	
PSI	000	000	000	000	000	000	000	000	000	
137	27	4	-	40	-	56	-	147	-	140
138	4	-	66	-	87	-	93	-	640	
139	11	55	22	-	71	-	100	-	250	
140	67	77	-	22	-	42	-	22	-	84
141	16	63	232	-	328	-	372	-	136	
142	16	52	-	107	-	172	-	216	-	167
143	49	68	169	-	250	-	294	-	151	
144	22	16	-	96	-	97	-	95	-	41
145	22	38	-	114	-	134	-	271	-	766
146	67	60	-	355	-	522	-	790	-	264
147	22	12	6	-	120	194	-	259	-	251
148	72	93	294	-	493	-	752	-	74	
149	72	62	-	45	-	22	-	34	-	12
150	25	78	169	-	259	-	393	-	199	
151	81	97	-	56	-	55	-	393	-	106
152	22	10	-	131	-	138	-	297	-	32
153	72	46	-	462	-	674	-	1,014	-	941
154	25	68	165	-	268	-	359	-	151	
155	59	18	-	15	-	20	-	19	-	395
156	121	41	408	-	717	-	1,046	-	199	
157	28	16	29	-	2	-	16	-	800	
158	75	79	189	-	358	-	515	-	301	
159	54	63	-	69	-	70	-	74	-	3
160	40	79	127	-	127	193	-	293	-	84
161	71	79	-	127	-	131	-	137	-	136
162	56	79	127	-	162	-	215	-	229	
163	4	18	-	30	-	30	-	33	-	182
164	90	44	221	-	269	-	365	-	448	
165	59	76	-	188	-	300	-	498	-	417
166	75	60	189	-	284	-	416	-	433	
167	36	27	-	47	-	52	-	70	-	59

TABLE 6. TEST DATA, LOAD CASE 4, SECOND RUN

ATM CABLE ARCH AND BEAM SIMULATIONAL CASE 4 337009 1-28-74										LOAD CELLS IN POUNDS FINAL PHINI									
DATE NUM		SCAN 002		SCAN 003		SCAN 004		SCAN 005		SCAN 006		SCAN 007		SCAN 008		SCAN 010		SCAN 011	
% LOAD	PSI	000	000	000	000	040	000	060	000	080	000	100	000	110	000	110	000	110	000
001	-	0	-	68	-	139	-	234	-	320	-	398	-	415	-	440	-	440	-
002	-	0	-	460	-	514	-	779	-	1,039	-	1,315	-	1,356	-	1,356	-	1,356	-
003	3	0	-	4	-	0	-	1	-	2	-	1	-	0	-	0	-	0	-
004	-	0	-	14	-	29	-	47	-	62	-	79	-	85	-	85	-	85	-
005	1	-	0	57	-	119	-	187	-	251	-	317	-	345	-	345	-	345	-
006	-	0	-	77	-	163	-	251	-	338	-	455	-	486	-	486	-	486	-
007	-	0	-	25	-	63	-	121	-	196	-	212	-	229	-	229	-	229	-
008	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
009	-	0	-	36	-	124	-	233	-	312	-	347	-	374	-	374	-	374	-
010	-	0	-	0	-	0	-	0	-	0	-	0	-	2	-	1	-	1	-
ATM CABLE ARCH AND BEAM SIMULATIONAL CASE 4 337009 1-28-74																			
DATE NUM		SCAN 002		SCAN 003		SCAN 004		SCAN 005		SCAN 006		SCAN 007		SCAN 008		SCAN 010		SCAN 011	
% LOAD	PSI	000	000	040	000	040	000	060	000	080	000	100	000	100	000	110	000	110	000
101	-	0	0003	-	0	0441	-	0	0451	-	0	0478	-	0	0693	-	0	1138	-
102	-	0	0005	-	0	0496	-	0	0218	-	0	0321	-	0	0514	-	0	0668	-
103	-	0	0009	-	0	0473	-	0	0218	-	0	0321	-	0	0514	-	0	0721	-
104	-	0	0001	-	0	0460	-	0	0172	-	0	0213	-	0	0386	-	0	0469	-
105	-	0	0003	-	0	0492	-	0	0198	-	0	0303	-	0	0211	-	0	0501	-
106	-	0	0001	-	0	0422	-	0	0460	-	0	0144	-	0	0186	-	0	0472	-
107	-	0	0000	-	0	0440	-	0	0687	-	0	0597	-	0	0220	-	0	0511	-
108	-	0	0002	-	0	0457	-	0	0513	-	0	0611	-	0	0752	-	0	0784	-
109	-	0	0003	-	0	0455	-	0	1363	-	0	2210	-	0	2981	-	0	3128	-
110	-	0	0002	-	0	0413	-	0	0725	-	0	1059	-	0	1677	-	0	1679	-
111	-	0	0004	-	0	0479	-	0	0433	-	0	0612	-	0	0804	-	0	0454	-
112	-	0	0001	-	0	0437	-	0	0164	-	0	0171	-	0	0451	-	0	0156	-
113	-	0	0002	-	0	0432	-	0	1911	-	0	3333	-	0	4331	-	0	0473	-
114	-	0	0003	-	0	0411	-	0	0665	-	0	0916	-	0	1322	-	0	1379	-
115	-	0	0000	-	0	0437	-	0	0261	-	0	0259	-	0	0151	-	0	0215	-
116	-	0	0000	-	0	0485	-	0	0664	-	0	0315	-	0	0918	-	0	0266	-
117	-	0	0000	-	0	1451	-	0	1990	-	0	3227	-	0	4441	-	0	1053	-
118	-	0	0004	-	0	0438	-	0	0587	-	0	0268	-	0	0804	-	0	0296	-
119	-	0	0004	-	0	0454	-	0	0174	-	0	0174	-	0	0451	-	0	0156	-
120	-	0	0003	-	0	0406	-	0	0174	-	0	0433	-	0	0379	-	0	0379	-
121	-	0	0006	-	0	0464	-	0	1252	-	0	2002	-	0	3932	-	0	3287	-
122	-	0	0002	-	0	0457	-	0	0856	-	0	1453	-	0	2021	-	0	3226	-
123	-	0	0000	-	0	0461	-	0	0468	-	0	0784	-	0	1318	-	0	0444	-
124	-	0	0003	-	0	0433	-	0	0192	-	0	0224	-	0	0668	-	0	0392	-
125	-	0	0004	-	0	0470	-	0	0876	-	0	1984	-	0	2019	-	0	0459	-
126	-	0	0002	-	0	0483	-	0	0160	-	0	0308	-	0	0433	-	0	0677	-
127	-	0	0002	-	0	0433	-	0	0260	-	0	0516	-	0	0885	-	0	0674	-
128	-	0	0002	-	0	0459	-	0	0312	-	0	0616	-	0	1864	-	0	2441	-
129	-	0	0002	-	0	0461	-	0	0261	-	0	0487	-	0	0664	-	0	0281	-

TABLE 6. (Continued)

AIN CABLE ARCH AND BEAM SIGNIFICANT CASE 4		337009		1-28-71		SINGLE STRAIN GAGES						FINAL PMINI				
GAZE NUM	SCAN 002	SCAN 003	SCAN 004	SCAN 006	SCAN 007	SCAN 009	SCAN 010	SCAN 011	SCAN 012	SCAN 013	SCAN 014	SCAN 015	SCAN 016			
% LOAD	0.00	0.20	0.40	0.60	0.80	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70			
PSI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
201	0	-	12.6	-	14.6	-	23.0	-	33.5	-	37.7	-	39.8	-	21	
202	-	6.3	-	31.4	-	41.8	-	64.9	-	90.0	-	1,13.0	-	1,19.3	-	84
203	-	0	36.9	-	39.8	-	64.9	-	81.6	-	1,00.4	-	1,08.6	-	146	
204	-	2.1	12.6	-	23.0	-	27.2	-	29.3	-	35.6	-	39.8	-	42	
205	-	2.1	25.1	-	39.8	-	56.5	-	75.3	-	87.9	-	1,00.4	-	146	
206	-	4.2	-	4.2	-	0	-	0	-	0	-	4.2	-	2.1	-	0
207	-	6.3	-	6.3	-	29.3	-	37.7	-	46.0	-	62.8	-	64.9	-	105
208	-	2.1	-	31.4	-	62.8	-	96.2	-	1,29.7	-	1,61.1	-	1,77.8	-	167
209	-	4.2	-	4.2	-	35.6	-	48.1	-	62.8	-	73.2	-	81.6	-	146
210	-	4.2	-	10.9	-	37.7	-	50.2	-	67.0	-	95.8	-	94.1	-	209
211	-	0	-	37.2	-	50.2	-	69.0	-	85.6	-	1,13.0	-	1,15.1	-	188
212	-	2.1	-	18.6	-	29.3	-	23.0	-	35.6	-	37.7	-	43.9	-	377
213	-	4.2	-	36.6	-	58.6	-	87.9	-	1,10.9	-	1,36.0	-	1,46.5	-	377
214	-	0	-	33.3	-	56.5	-	79.3	-	1,00.4	-	1,13.0	-	1,31.8	-	42
215	-	2.1	-	18.6	-	29.3	-	41.8	-	46.0	-	60.7	-	58.6	-	42
216	-	4.2	-	4.2	-	37.7	-	54.4	-	60.7	-	73.2	-	71.1	-	33.5
217	-	0	-	6.3	-	21	-	6.3	-	10.5	-	16.2	-	20.9	-	21
218	-	2.1	-	6.3	-	6.3	-	21	-	42	-	42	-	42	-	42
219	-	2.1	-	14.6	-	23.0	-	35.6	-	41.8	-	69.0	-	71.1	-	43.9
220	-	2.1	-	10.9	-	18.6	-	27.2	-	35.6	-	48.1	-	56.5	-	69.0
221	-	4.2	-	18.6	-	20.9	-	39.8	-	56.5	-	77.4	-	81.6	-	105
222	-	0	-	9.2	-	6.3	-	6.3	-	10.5	-	8.4	-	10.5	-	23.9
223	-	0	-	12.6	-	23.0	-	35.6	-	43.9	-	62.8	-	69.0	-	209
224	-	2.1	-	4.2	-	12.6	-	16.7	-	33.5	-	41.8	-	50.2	-	67.0
225	-	2.1	-	0	-	10.5	-	4.2	-	1.67	-	1.88	-	4.2	-	6.3
226	-	6.3	-	17.7	-	79.5	-	1,33.9	-	1,73.7	-	2,19.7	-	2,38.9	-	1,40.2
227	-	4.2	-	20.9	-	43.9	-	83.7	-	1,17.2	-	1,27.6	-	1,31.8	-	56.5
228	-	0	-	45.1	-	56.5	-	1,08.6	-	1,44.4	-	2,09.2	-	2,38.5	-	77.4
229	-	0	-	10.9	-	25.1	-	27.2	-	39.8	-	33.5	-	31.4	-	162.481
230	-	2.1	-	6.3	-	8.4	-	14.6	-	14.6	-	8.4	-	8.4	-	67.0
231	-	2.1	-	21	-	21	-	42	-	1.67	-	2.72	-	3.14	-	79.5
232	-	6.3	-	19.7	-	58.6	-	96.2	-	1,31.8	-	1,79.9	-	2,00.9	-	64

TABLE 6. (Continued)

ALM CABLE ANCH AND BEAM STRUCTURAL CASE 4		337009		1-28-71		RECTANGULAR ROSETTES		FINAL PRINT	
GAGE NUM	SCAN 002	SCAN 003	SCAN 004	SCAN 006	SCAN 007	SCAN 009	SCAN 010	SCAN 011	SCAN
* LOAD PSI	000	020	040	060	080	100	110	000	000
801	-	81	71	149	185	145	267	295	-
802	-	19	-	274	-	614	-	1,138	-
803	-	50	133	211	30	380	642	716	2,466
804	-	39	-	77	-	78	-	81	1,155
805	-	22	-	65	-	36	-	503	1,065
806	-	22	61	67	124	235	317	362	449
807	-	22	34	22	28	25	32	31	23
808	-	102	412	329	540	635	970	1,100	1,963
809	-	96	103	110	145	145	248	274	-
810	-	16	-	22	0	162	245	361	413
811	-	75	-	196	22	67	145	145	-
812	-	47	-	134	-	245	-	396	-
813	-	45	-	56	-	99	120	139	349
814	-	56	174	274	50	40	39	37	63
815	-	11	60	134	235	308	660	501	162
816	-	67	-	88	83	-	84	86	67
817	-	23	49	56	61	54	87	59	430
818	-	4	-	144	-	249	-	524	-
819	-	11	80	103	155	194	305	953	329
820	-	63	-	29	31	-	7	48	-
821	-	31	-	78	18	92	130	145	267
822	-	45	-	47	33	92	-	207	-
823	-	40	-	42	22	30	-	176	235
824	-	9	-	26	15	29	-	32	-
825	-	54	-	45	50	47	-	451	251
826	-	16	-	67	168	297	342	469	713
827	-	10	-	416	250	390	623	764	-
828	-	43	-	103	219	363	493	608	944
829	-	9	-	2	11	10	134	443	-
830	-	40	-	94	57	96	-	209	254
831	-	25	-	42	57	158	227	455	680
832	-	112	-	149	261	469	542	783	-
833	-	56	-	70	90	126	160	283	363
834	-	39	-	6	37	45	39	46	43
835	-	93	109	222	385	467	591	634	946
836	-	46	16	81	135	155	201	244	592
837	-	15	-	42	75	72	84	89	49

TABLE 6. (Concluded)

RECTANGULAR ROSETTES FINAL PRINT															
AIM CABLE ARCH AND BEAM SINGULAR CASE 4 337009 1-28-71		SCAN 002		SCAN 003		SCAN 004		SCAN 006		SCAN 007	SCAN 009	SCAN 010	SCAN 011	SCAN	
% LOAD	PSI	000	000	000	000	040	000	060	000	080	000	100	000	110	000
.837	-	7	40	134	261	299	-	358	-	304	-	354	-	354	-
.838	-	87	9	22	82	76	17	-	54	-	24304	-	24304	-	24304
.839	-	40	25	56	90	111	170	-	179	-	977	-	977	-	977
.840	-	51	9	23	19	22	-	28	-	26	-	60	-	60	-
.841	-	53	42	18	193	132	-	112	-	60	-	396	-	396	-
.842	-	22	302	267	1,118	1,336	-	1,824	-	1,813	-	3,425	-	3,425	-
.843	-	67	130	1,42	1,463	1,602	856	-	876	-	1,6910	-	1,6910	-	1,6910
.844	-	40	77	87	81	81	-	80	79	79	79	-	79	-	79
.845	-	71	111	65	207	334	-	350	-	344	-	1,699	-	1,699	-
.846	-	56	133	138	215	215	-	925	-	1,117	-	1,186	-	1,186	-
.847	-	67	22	15	12	6	-	14	-	16	-	69	-	69	-
.848	-	72	199	311	572	830	1,152	-	1,223	-	514	-	514	-	514
.849	-	25	20	32	53	44	97	89	-	89	-	886	-	886	-
.850	-	54	90	139	259	393	527	567	-	567	-	699	-	699	-
.851	-	0	23	53	52	53	54	-	55	-	41	-	41	-	41
.852	-	157	-	165	437	428	664	-	664	-	669	-	669	-	669
.853	-	63	249	553	1,000	1,196	1,522	-	1,485	-	2,605	-	2,605	-	2,605
.854	-	31	46	194	281	384	429	-	429	-	2,619	-	2,619	-	2,619
.855	-	90	15	16	13	17	-	14	-	17	-	82	-	82	-
.856	-	58	345	558	947	1,344	1,669	-	1,703	-	794	-	794	-	794
.857	-	36	92	66	21	124	111	108	-	108	-	2,516	-	2,516	-
.858	-	11	127	246	463	610	779	797	-	797	-	861	-	861	-
.859	-	23	75	77	80	75	78	-	79	-	5	-	5	-	5
.860	-	47	18	141	228	247	193	-	203	-	495	-	495	-	495
.861	-	19	49	16	72	122	99	-	109	-	402	-	402	-	402
.862	-	16	33	79	150	184	146	-	156	-	448	-	448	-	448
.863	-	0	22	45	43	35	27	-	25	-	9	-	9	-	9
.864	-	22	35	4	59	134	120	-	222	-	509	-	509	-	509
.865	-	72	35	27	90	103	214	-	222	-	790	-	790	-	790
.866	-	25	35	11	75	118	167	-	222	-	650	-	650	-	650
.867	-	9	13	22	-	36	-	47	-	49	-	64	-	64	-

TABLE 7. TEST DATA, LOAD CASE 4, FINAL RUN

AIM CABLE ARCH AND BEAM STRUCTURAL CASE 4 337010 2-5-71									
GAGE NUM	SCAN 001	SCAN 002	SCAN 003	SCAN 004	SCAN 006	SCAN 008	SCAN 010	SCAN 012	FINAL PRINT
% LOAD	000	000	040	060	080	100	110	120	125
PSI	000	000	000	000	000	000	000	000	000
001	-	2	-	56	-	213	-	403	-
002	-	0	467	529	793	1,052	1,320	1,446	-
003	-	1	-	1	0	2	0	1	1,579
004	-	0	-	14	29	45	63	87	1,643
005	-	0	-	58	122	186	251	316	0
006	-	1	99	182	271	365	455	546	-
007	-	0	35	78	123	169	215	235	565
008	9	0	0	0	0	0	0	0	270
009	0	67	159	231	305	348	432	469	494

AIM CABLE ARCH AND BEAM STRUCTURAL CASE 4 337010 2-5-71									
GAGE NUM	SCAN 015	SCAN 016	SCAN 017	SCAN 018	SCAN 019	SCAN 020	SCAN 021	SCAN 022	FINAL PRINT
% LOAD	110	060	000	000	000	000	000	000	SCAN
PSI	000	000	000	000	000	000	000	000	SCAN
001	-	477	-	461	-	39	-	-	
002	-	1,456	-	798	12	-	-	-	
003	-	901	-	51	0	-	-	-	
004	-	98	-	59	-	13	-	-	
005	-	351	-	192	-	12	-	-	
006	-	509	490	17	17	-	-	-	
007	-	246	146	15	15	-	-	-	
008	0	0	0	1	1	-	-	-	
009	442	457	13	-	-	-	-	-	

TABLE 7. (Continued)

AIM CABLE ARCH AND BEAM STRENGTH		CASE 4		337010		2-5-71		DISPLACEMENT POTS		FINAL PRINT	
DATE NUM	SCAN 001	SCAN 002	SCAN 003	SCAN 004	SCAN 005	SCAN 006	SCAN 007	SCAN 008	SCAN 010	SCAN 012	SCAN 014
% LOAD PSI	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00							
101	0.00002	0.0484	0.0499	0.0714	0.0922	0.1187	0.1250	0.1404	0.1431		
102	0.0003	-0.0151	-0.0255	-0.0372	-0.0504	-0.0639	-0.0694	-0.0815	-0.0839		
103	0.0006	-0.0090	-0.0203	-0.0322	-0.0467	-0.0618	-0.0682	-0.0818	-0.0844		
104	-0.0002	-0.0071	-0.0149	-0.0241	-0.0340	-0.0453	-0.0496	-0.0605	-0.0619		
105	0.0003	-0.0073	-0.0152	-0.0247	-0.0348	-0.0455	-0.0503	-0.0629	-0.0643		
106	0.0002	-0.0080	-0.0168	-0.0250	-0.0369	-0.0460	-0.0520	-0.0637	-0.0724		
107	0.0003	-0.0032	-0.0054	-0.0074	-0.0109	-0.0128	-0.0139	-0.0164	-0.0168		
108	0.0000	-0.0023	-0.0052	-0.0062	-0.0083	-0.0093	-0.0097	-0.0091	-0.0091		
109	-0.0002	-0.0040	-0.0149	-0.0249	-0.0363	-0.0463	-0.0577	-0.0691	-0.0805		
110	0.0000	-0.0075	-0.0157	-0.0267	-0.0367	-0.0467	-0.0577	-0.0685	-0.0807		
111	-0.0002	-0.0012	-0.0035	-0.0051	-0.0065	-0.0085	-0.0097	-0.0104	-0.0118		
112	0.0000	-0.0060	-0.0052	-0.0060	-0.0072	-0.0085	-0.0091	-0.0102	-0.0112		
113	-0.0004	-0.0134	-0.0201	-0.0305	-0.0414	-0.0546	-0.0615	-0.0737	-0.0756		
114	0.0000	-0.0068	-0.0142	-0.0289	-0.0412	-0.0506	-0.0618	-0.0723	-0.0834		
115	-0.0004	-0.0137	-0.0145	-0.0130	-0.0095	-0.0035	-0.0014	-0.0026	-0.0036		
116	0.0000	-0.0020	-0.0027	-0.0041	-0.0071	-0.0101	-0.0182	-0.0148	-0.0132		
117	0.0006	-0.0163	-0.0217	-0.0329	-0.0457	-0.0586	-0.0684	-0.0755	-0.0829		
118	-0.0006	-0.0141	-0.0224	-0.0381	-0.0491	-0.0564	-0.0662	-0.0702	-0.0742		
119	-0.0004	-0.0113	-0.0128	-0.0131	-0.0124	-0.0138	-0.0138	-0.0096	-0.0099		
120	0.0003	-0.0065	-0.0162	-0.0474	-0.0724	-0.1004	-0.1139	-0.1374	-0.1460		
121	-0.0006	-0.0073	-0.0186	-0.0205	-0.0283	-0.0374	-0.0427	-0.0497	-0.0530		
122	0.0000	-0.0070	-0.0064	-0.0145	-0.0194	-0.0269	-0.0302	-0.0352	-0.0373		
123	-0.0004	-0.0062	-0.0072	-0.0088	-0.0059	-0.0128	-0.0145	-0.0170	-0.0185		
124	-0.0002	-0.0059	-0.0052	-0.0049	-0.0064	-0.0096	-0.0107	-0.0127	-0.0154		
125	-0.0002	-0.0066	-0.0084	-0.0160	-0.0206	-0.0269	-0.0301	-0.0351	-0.0376		
126	-0.0004	-0.0105	-0.0234	-0.0368	-0.0525	-0.0351	-0.0351	-0.0351	-0.0351		
127	0.0000	-0.0135	-0.0231	-0.0355	-0.0569	-0.0856	-0.1008	-0.1249	-0.1389		
128	-0.0004	-0.0023	-0.0097	-0.0168	-0.0254	-0.0380	-0.0426	-0.0526	-0.0561		
129	-0.0002	-0.0132	-0.0284	-0.0426	-0.0597	-0.0800	-0.0913	-0.1068	-0.1150		

TABLE 7. (Continued)

AIM CABLE ARCH AND BEAM STRUCTURAL CASE 4		337010		2-5-71		DISPLACEMENT POTS		FINAL PMINI	
GAGE NUM	SCAN 012	SCAN 016	SCAN 017	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN
101	0.1396	0.0339	-	0.0282					
102	-	0.0802	-	0.0226	-	0.0140			
103	-	0.0809	-	0.0211	-	0.0151			
104	-	0.0605	-	0.0396	-	0.0136			
105	-	0.0619	-	0.0401	-	0.0128			
106	-	0.2713	-	0.1932	-	0.0735			
107	-	0.1622	-	0.1136	-	0.0501			
108	-	0.0858	-	0.0274	-	0.0346			
109	-	0.2123	-	0.3732	-	0.1290			
110	-	0.2267	-	0.1610	-	0.0595			
111	-	0.1184	-	0.0631	-	0.0366			
112	-	0.0087	-	0.0031	-	0.0114			
113	-	0.7417	-	0.5373	-	0.1744			
114	-	0.2025	-	0.1522	-	0.0674			
115	-	0.0011	-	0.0003	-	0.0247			
116	0.1453	0.0337	-	0.0070					
117	0.8027	0.5762	-	0.1841					
118	-	0.2089	-	0.1954	-	0.0616			
119	-	0.0113	-	0.0262	-	0.0209			
120	0.1398	0.0024	-	0.0088					
121	0.5159	0.5730	-	0.1205					
122	0.3668	0.2660	-	0.0868					
123	-	0.1791	-	0.1390	-	0.0557			
124	0.1309	0.0058	-	0.0181					
125	0.3655	0.2939	-	0.0868					
126	2.0351	2.0351	-	2.0351					
127	-	0.1341	-	0.1042	-	0.0500			
128	0.0561	0.0433	-	0.0193					
129	0.2114	0.1766	-	0.0249					

TABLE 7. (Continued)

ALM CABLE ARCH AND BEAM SINGULAR CASE 4		3337040		2-5-74		SINGLE STRAIN GAGES		FINAL PRINT		
GAGE NUM	SCAN 001	SCAN 002	SCAN 003	SCAN 004	SCAN 005	SCAN 006	SCAN 008	SCAN 010	SCAN 012	SCAN 014
% LOAD	000	080	040	000	060	080	100	110	120	120
PSI	000	000	000	000	000	000	000	000	000	000
201	0	-	146	-	209	-	293	-	460	-
202	0	-	209	-	439	-	670	-	816	-
203	-	42	167	-	377	-	607	-	774	-
204	-	42	146	-	409	-	272	-	1,004	-
205	-	42	251	-	418	-	795	-	941	-
206	-	21	63	-	84	-	42	-	21	-
207	-	63	-	-	335	-	502	-	628	-
208	-	42	-	114	-	670	-	983	-	1,276
209	-	42	-	372	-	418	-	481	-	607
210	-	42	-	914	-	481	-	649	-	807
211	-	21	314	-	460	-	670	-	879	-
212	-	21	146	-	272	-	377	-	711	-
213	-	0	356	-	586	-	858	-	1,053	-
214	-	21	439	-	628	-	837	-	1,025	-
215	-	0	-	251	-	335	-	418	-	502
216	-	0	-	451	-	377	-	460	-	628
217	-	42	-	84	-	21	-	42	-	690
218	-	0	-	0	-	0	-	0	-	188
219	0	-	63	-	209	-	335	-	460	-
220	0	-	84	-	126	-	209	-	335	-
221	-	42	105	-	251	-	377	-	460	-
222	-	42	21	-	42	-	63	-	126	-
223	-	0	-	63	-	167	-	293	-	460
224	-	84	63	-	63	-	105	-	230	-
225	-	42	-	42	-	209	-	377	-	586
226	-	21	-	244	-	1,109	-	1,548	-	2,029
227	-	21	-	398	-	879	-	1,318	-	1,716
228	-	21	-	498	-	398	-	607	-	916
229	-	42	-	442	-	209	-	293	-	418
230	-	0	-	409	-	335	-	377	-	481
231	-	21	-	126	-	377	-	460	-	628
232	-	21	-	167	-	272	-	460	-	753

TABLE 7. (Continued)

GAGE NUM	ALM CABLE ARCH AND BEAM STRUCTURAL CASE 4			CASE 4 337010			2-5-74			FINAL PHINI		
	% LOAD	SCAN 015	SCAN 016	SCAN 017	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN
PSI	110	060	000	000	000	000	000	000	000	000	000	000
201	-	418	-	293	-	0	-	-	-	-	-	-
202	-	1,215	-	690	-	0	-	-	-	-	-	-
203	-	1,088	-	628	-	0	-	-	-	-	-	-
204	-	377	-	430	-	84	-	-	-	-	-	-
205	-	1,004	-	392	-	21	-	-	-	-	-	-
206	-	63	-	84	-	126	-	-	-	-	-	-
207	-	753	-	335	-	0	-	-	-	-	-	-
208	-	1,820	-	941	-	21	-	-	-	-	-	-
209	-	637	-	565	-	0	-	-	-	-	-	-
210	-	1,172	-	711	-	146	-	-	-	-	-	-
211	-	1,213	-	732	-	63	-	-	-	-	-	-
212	-	63	-	356	-	879	-	-	-	-	-	-
213	-	1,527	-	616	-	84	-	-	-	-	-	-
214	-	1,318	-	795	-	84	-	-	-	-	-	-
215	-	607	-	356	-	0	-	-	-	-	-	-
216	-	774	-	460	-	105	-	-	-	-	-	-
217	-	356	-	472	-	0	-	-	-	-	-	-
218	-	63	-	146	-	105	-	-	-	-	-	-
219	-	616	-	418	-	0	-	-	-	-	-	-
220	-	628	-	460	-	209	-	-	-	-	-	-
221	-	586	-	451	-	209	-	-	-	-	-	-
222	-	167	-	426	-	63	-	-	-	-	-	-
223	-	690	-	398	-	63	-	-	-	-	-	-
224	-	272	-	430	-	0	-	-	-	-	-	-
225	-	2,234	-	879	-	209	-	-	-	-	-	-
226	-	2,741	-	4,227	-	42	-	-	-	-	-	-
227	-	2,804	-	1,983	-	146	-	-	-	-	-	-
228	-	1,025	-	377	-	272	-	-	-	-	-	-
229	-	502	-	335	-	63	-	-	-	-	-	-
230	-	272	-	493	-	126	-	-	-	-	-	-
231	-	795	-	626	-	21	-	-	-	-	-	-
232	-	1,339	-	907	-	21	-	-	-	-	-	-

TABLE 7. (Continued)

ATM CABLE ARCH AND BEAM SUBSTRUCTURAL CASE '4 337010 2-5-71										RECTANGULAR ROSETTES				FINAL PRINT							
CASE NUM	SCAN 001	SCAN 002	SCAN 003	SCAN 004	SCAN 005	SCAN 006	SCAN 007	SCAN 010	SCAN 012	SCAN 014	SCAN 015	SCAN 016	SCAN 017	SCAN 018	SCAN 019						
% LOAD	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000						
-301	63	-	69	11	-	144	202	265	-	252	-	308	-	278	-						
-302	-	63	212	-	292	-	394	-	577	-	765	-	939	-	1,119	-					
-303	63	-	71	151	-	269	389	515	-	515	-	713	-	731	-						
-304	-	45	97	-	86	-	80	-	83	-	84	-	84	-	84	-					
-305	31	-	98	163	-	190	-	256	-	522	-	584	-	594	-	680	-				
-306	-	31	27	-	38	-	34	-	37	-	9	-	22	-	60	-					
-307	0	-	35	101	-	112	146	257	-	303	-	366	-	369	-	369	-				
-308	-	45	13	19	-	25	18	14	-	14	-	29	-	20	-	20	-				
-309	35	-	51	104	-	122	212	275	-	253	-	392	-	299	-	291	-				
-310	-	75	90	115	-	190	246	309	-	378	-	428	-	456	-	456	-				
-311	-	36	-	19	-	8	-	12	-	13	-	7	-	10	-	8	-				
-312	-	40	-	4	-	4	46	-	33	-	88	-	99	-	164	-	96	-			
-313	-	85	-	27	-	27	204	-	217	-	287	-	338	-	404	-	435	-			
-314	-	22	-	11	-	11	79	92	-	99	-	120	-	120	-	120	-				
-315	67	-	67	45	-	45	45	50	-	30	-	36	-	33	-	33	-				
-316	81	-	81	223	-	426	517	800	-	879	-	974	-	974	-	1,035	-				
-317	19	-	19	-	36	74	-	16	-	12	-	4	-	37	-	36	-				
-318	50	-	50	130	-	170	267	394	-	442	-	504	-	536	-	536	-				
-319	36	-	81	83	-	85	90	-	89	-	88	-	87	-	86	-	86	-			
-320	-	55	35	21	-	19	36	-	36	-	55	-	46	-	52	-	52	-			
-321	-	9	-	88	-	115	-	300	-	348	-	524	-	577	-	708	-	751	-		
-322	-	22	57	68	-	159	192	-	192	-	286	-	312	-	360	-	392	-			
-323	-	23	29	27	-	29	29	28	-	24	-	24	-	25	-	26	-	312	-		
-324	-	30	-	31	-	19	49	130	-	236	-	245	-	234	-	281	-	281	-		
-325	-	61	-	81	-	111	-	130	-	174	-	214	-	266	-	296	-	296	-		
-326	-	46	0	50	-	60	-	130	-	205	-	229	-	250	-	250	-	250	-		
-327	-	60	45	-	36	-	51	-	38	-	43	-	42	-	39	-	40	-	39	-	
-328	-	7	34	39	-	52	-	32	-	32	-	37	-	42	-	43	-	43	-		
-329	-	87	-	96	-	102	-	252	-	311	-	326	-	422	-	551	-	479	-		
-330	-	40	65	70	-	127	139	155	-	219	-	219	-	254	-	229	-	229	-		
-331	-	51	52	58	-	49	53	-	52	-	52	-	52	-	53	-	53	-	53	-	
-332	-	49	32	191	-	266	406	-	678	-	769	-	807	-	876	-	876	-	876	-	
-333	-	18	-	157	-	254	-	391	-	470	-	615	-	644	-	746	-	746	-	746	-
-334	-	33	94	222	-	328	439	-	439	-	647	-	707	-	776	-	831	-	831	-	
-335	-	67	0	-	4	-	8	-	7	-	9	-	8	-	9	-	9	-	9	-	
-336	-	15	9	3	-	9	-	95	-	61	-	81	-	160	-	160	-	160	-	160	-
-337	-	110	-	40	-	159	-	159	-	139	-	237	-	348	-	322	-	366	-	366	-
-338	-	147	25	81	-	112	-	139	-	139	-	254	-	254	-	244	-	259	-	259	-
-339	-	45	91	60	-	65	-	53	-	53	-	56	-	56	-	55	-	55	-	55	-
-340	-	65	-	116	-	156	-	185	-	317	-	411	-	444	-	497	-	547	-	547	-
-341	-	65	-	165	-	219	-	377	-	527	-	682	-	743	-	845	-	796	-	796	-
-342	-	65	25	31	-	96	-	105	-	136	-	149	-	174	-	124	-	124	-	124	-
-343	-	52	-	54	-	45	-	50	-	51	-	50	-	54	-	54	-	54	-	54	-
-344	-	0	430	296	-	390	-	500	-	644	-	758	-	762	-	822	-	822	-	822	-
-345	-	0	19	47	-	78	94	199	-	199	-	179	-	179	-	177	-	177	-	177	-
-346	-	0	106	124	-	166	203	223	-	223	-	269	-	312	-	323	-	323	-	323	-
-347	-	42	-	28	-	62	-	65	-	72	-	69	-	67	-	69	-	69	-	69	-

TABLE 7. (Continued)

A1N CABLE ARCH AND BEAM SINGULAR CASE 4		337010		205-71		RECTANGULAR ROSETTES		FINAL PHINI	
GAKE NUM	SCAN 012	SCAN 016	SCAN 017	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN
% LOAD	110 PSI	080 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI
401	-	371	-	449	-	28	-	-	-
402	-	1452	-	717	-	247	-	-	-
403	-	762	-	483	-	138	-	-	-
404	-	82	-	82	-	75	-	-	-
405	-	601	-	446	-	317	-	-	-
406	-	335	-	443	-	130	-	-	-
407	-	1186	-	159	-	7	-	-	-
408	-	251	-	22	-	19	-	-	-
409	-	468	-	454	-	159	-	-	-
410	-	110	-	10	-	16	-	-	-
411	-	113	-	14	-	19	-	-	-
412	-	511	-	336	-	81	-	-	-
413	-	199	-	111	-	50	-	-	-
414	-	36	-	41	-	36	-	-	-
415	-	976	-	924	-	88	-	-	-
416	-	39	-	30	-	25	-	-	-
417	-	507	-	427	-	57	-	-	-
418	-	86	-	85	-	73	-	-	-
419	-	59	-	9	-	0	-	-	-
420	-	684	-	459	-	219	-	-	-
421	-	371	-	226	-	110	-	-	-
422	-	27	-	27	-	34	-	-	-
423	-	273	-	197	-	93	-	-	-
424	-	304	-	422	-	186	-	-	-
425	-	289	-	259	-	139	-	-	-
426	-	36	-	18	-	37	-	-	-
427	-	539	-	475	-	112	-	-	-
428	-	274	-	165	-	112	-	-	-
429	-	54	-	58	-	65	-	-	-
430	-	671	-	442	-	300	-	-	-
431	-	692	-	423	-	19	-	-	-
432	-	761	-	533	-	159	-	-	-
433	-	119	-	8	-	16	-	-	-
434	-	135	-	15	-	62	-	-	-
435	-	353	-	434	-	62	-	-	-
436	-	244	-	124	-	0	-	-	-
437	-	55	-	54	-	45	-	-	-
438	-	507	-	480	-	98	-	-	-
439	-	902	-	694	-	120	-	-	-
440	-	149	-	37	-	11	-	-	-
441	-	54	-	73	-	22	-	-	-
442	-	196	-	437	-	134	-	-	-
443	-	172	-	125	-	84	-	-	-
444	-	312	-	166	-	25	-	-	-
445	-	69	-	67	-	54	-	-	-

TABLE 7. (Continued)

AIM CABLE ARCH AND BEAM STRUCTURAL CASE 4 337010 2-5-71										HECTANGULAR ROSETTES FINAL PRINT			
GAGE NUM	SCAN 001	SCAN 002	SCAN 003	SCAN 004	SCAN 005	SCAN 006	SCAN 008	SCAN 010	SCAN 012	SCAN 014			
% LOAD	000	000	000	000	000	000	000	000	000	000	000	000	000
PSI	000	000	000	000	000	000	000	000	000	000	000	000	000
337	81	107	199	-	391	423	534	614	741	717			
338	-	19	-	13	20	109	139	153	166	227	220		
339	50	-	60	90	-	141	142	190	224	-	257		
340	-	9	-	12	8	-	3	-	12	-	14	-	249
341	90	-	459	481	-	624	775	1,033	1,302	-	1,381	-	1,483
342	-	59	-	40	-	75	155	-	275	-	365	-	390
343	75	-	150	278	-	389	525	-	674	834	-	881	936
344	-	36	-	43	-	49	-	49	-	46	-	45	-
345	15	-	170	-	215	-	325	-	478	-	556	-	624
346	-	47	-	330	-	597	-	861	-	1,208	-	1,442	-
347	16	-	80	-	191	-	268	-	365	-	443	-	516
348	-	45	6	5	2	4	3	4	3	4	1	1	3
349	66	-	419	477	-	641	931	1,140	1,297	-	1,431	-	1,521
350	-	4	31	-	71	-	16	6	15	-	17	-	53
351	35	-	94	274	-	328	463	562	657	-	713	-	787
352	-	29	-	45	-	54	-	54	-	54	-	56	-
353	221	-	135	-	300	-	438	-	572	-	729	-	879
354	96	-	201	-	856	-	1,279	-	1,677	-	2,113	-	2,347
355	-	173	-	278	-	420	-	553	-	692	-	770	-
356	40	-	15	-	4	-	4	-	2	-	4	-	5
357	-	6	379	781	-	1,160	1,542	2,023	2,236	-	2,497	-	2,611
358	-	119	90	124	-	214	238	319	356	-	376	-	449
359	57	-	145	329	473	652	852	940	1,061	-	1,081	-	
360	62	-	79	-	82	-	81	-	79	-	80	-	79
361	119	57	-	150	-	244	-	441	-	331	-	379	-
362	6	-	57	-	118	-	213	-	254	-	268	-	224
363	-	57	57	134	-	228	228	348	299	-	316	-	349
364	-	62	-	62	-	47	-	46	-	42	-	43	-
365	-	65	-	65	-	181	276	291	448	-	480	-	449
366	-	65	-	65	-	150	245	-	322	-	417	-	484
367	-	65	-	65	-	165	261	307	433	-	464	-	551
368	-	65	52	-	44	-	48	-	46	-	44	-	520
369	-	52	-	52	-	44	-	48	-	46	-	45	-

TABLE 7. (Concluded)

AIM CABLE ARCH AND BEAM STRUCTURAL CASE 4		337010 2-5-71		RECTANGULAR ROSETTES		FINAL P.M.I.	
CASE NUM	SCAN 015	SCAN 016	SCAN 017	SCAN	SCAN	SCAN	SCAN
% LOAD	110	000	000	000	000	000	000
PSI	000	000	000	000	000	000	000
337	720	429	158				
338	248	133	-	96			
339	236	148	-	127			
340	-	13	-	16	-	41	
341	-	1,436	2,176	-	759		
342	-	405	-	408	-	9	
343	-	920	-	692	-	384	
344	-	45	-	41	-	28	
345	-	731	-	266	-	157	
346	-	1,861	-	1,445	-	249	
347	-	565	-	340	-	46	
348	-	4	-	7	-	15	
349	-	1,399	-	916	-	56	
350	-	6	-	21	-	36	
351	-	697	-	948	-	11	
352	-	55	-	24	-	22	
353	-	828	-	226	-	88	
354	-	2,07	-	1,723	-	381	
355	-	690	-	299	-	146	
356	-	4	-	2	-	27	
357	-	2,435	-	1,900	-	290	
358	-	345	-	336	-	23	
359	-	1,045	-	632	-	133	
360	-	80	-	81	-	67	
361	-	393	-	468	-	40	
362	-	206	-	405	-	9	
363	-	299	-	436	-	25	
364	-	43	-	43	-	54	
365	-	472	-	362	-	142	
366	-	472	-	362	-	80	
367	-	472	-	362	-	111	
368	-	472	-	362	-	49	
369	-	472	-	362	-	49	
370	-	44	-	45	-	49	

TABLE 8. TEST DATA, LOAD CASE 5

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AIM CABLE ARCH AND BEAM SINGULAR CASE 5 337005 1-22-71										LOAD CELLS IN POUNDS		FINAL PRINT					
GAGE NUM		SCAN 001		SCAN 002		SCAN 003		SCAN 004		LOAD CELLS IN POUNDS		FINAL PRINT					
% LOAD	PSI	000	000	020	020	040	040	060	060	080	080	100	100	110	120	125	125
001	-	0	0	495	495	604	604	929	929	1,212	1,212	1,561	1,561	1,721	1,888	1,972	1,972
002	-	0	0	1	1	0	0	-	-	1	0	0	0	1	1	-	-
003	-	3	63	143	220	220	220	309	309	393	393	432	432	466	466	491	491
004	-	0	41	95	151	151	151	205	205	288	288	314	314	343	343	358	358
005	-	0	421	442	669	669	669	895	895	1,166	1,166	1,277	1,277	1,395	1,395	1,455	1,455
006	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
007	-	0	0	3	3	3	3	2	2	-	-	2	2	3	3	3	3
008	-	0	28	62	101	101	101	138	138	205	205	228	228	253	253	264	264
009	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
010	-	0	13	35	62	62	62	95	95	126	126	142	142	159	159	163	163

AIM CABLE ARCH AND BEAM SINGULAR CASE 5 337005 1-22-71										LOAD CELLS IN POUNDS		FINAL PRINT					
GAGE NUM		SCAN 011		SCAN 012		SCAN 013		SCAN 014		LOAD CELLS IN POUNDS		FINAL PRINT					
% LOAD	PSI	110	000	000	000	000	000	000	000	000	000	000	000	000	000	000	
001	-	4,971	-	4,962	-	4,962	-	4,962	-	1	1	-	-	-	-	-	-
002	-	1	-	1	-	1	-	1	-	1	1	-	-	-	-	-	-
003	-	440	-	441	-	441	-	441	-	0	0	-	-	-	-	-	-
004	-	348	-	408	-	408	-	408	-	0	0	-	-	-	-	-	-
005	-	1,336	-	2,115	-	2,115	-	2,115	-	5	5	-	-	-	-	-	-
006	-	1	-	0	-	0	-	0	-	0	0	-	-	-	-	-	-
007	-	2	-	0	-	0	-	0	-	0	0	-	-	-	-	-	-
008	-	244	-	243	-	243	-	243	-	1	1	-	-	-	-	-	-
009	-	0	-	0	-	0	-	0	-	0	0	-	-	-	-	-	-
010	-	159	-	84	-	84	-	84	-	1	1	-	-	-	-	-	-

TABLE 8. (Continued)

AIM CABLE-ARCH AND BEAM SIGNIFICANT CASE 5 337005 1-22-71							DISPLACEMENT POTS				FINAL PHANTOM		
SCENE NUM	SCAN 001	SCAN 002	SCAN 003	SCAN 004	SCAN 005	SCAN 006	SCAN 007	SCAN 008	SCAN 009	SCAN 010			
N LOAD	000	040	060	080	100	100	100	100	110	120			
PSI	000	000	000	000	000	000	000	000	000	000			
101	000000	000003	000000	-	00010	-	00014	-	00058	-	00082	-	00091
102	-	000002	000001	000617	00968	01295	01723	01905	02099	02200	-	-	
103	-	000003	000496	00638	01030	01346	01810	02002	02214	02315	-	-	
104	-	000004	000278	00598	00943	01265	01683	01867	02059	02154	-	-	
105	-	000005	000304	00638	01016	01368	01831	02029	02242	02350	-	-	
106	-	000002	000253	01192	01891	02555	03488	03864	04257	04458	-	-	
107	-	000006	000232	01145	01892	02445	03328	03687	04061	04253	-	-	
108	-	000000	000779	01226	01986	02594	03514	03884	04276	04470	-	-	
109	-	000002	00007	-	00009	-	00027	-	00068	-	00073	-	00072
110	-	000000	000356	00744	01167	01576	02139	02365	02603	02723	-	-	
111	-	000000	000343	00718	01114	01495	02015	02223	02443	02559	-	-	
112	-	000004	000354	00736	01148	01542	02094	02311	02545	02668	-	-	
113	-	000004	000600	00004	00053	00049	00102	00123	00162	00172	-	-	
114	-	000000	000941	00055	00044	00058	0006	00018	00026	00015	-	-	
115	-	000002	00095	00112	00138	00170	00179	00174	00162	00188	-	-	
116	-	000000	000947	00070	00079	00088	00061	00041	00032	00032	-	-	
117	-	000003	00006	00012	00056	00056	00091	00102	00126	00135	-	-	
118	-	000000	00093	00006	00076	00117	00257	00315	00374	00382	-	-	
119	-	000000	00095	00000	00046	00078	00184	00234	00276	00291	-	-	
120	-	000006	000012	-	00003	00059	00079	00200	00244	00283	00303	-	
121	-	000000	00000	00006	00038	00023	00035	00041	00049	00049	-	-	
122	-	000002	00000	-	00004	00028	00021	00025	00028	00028	-	-	
123	-	000000	00000	00032	00165	00156	00301	00358	00411	00433	-	-	
124	-	000000	00014	00000	00063	00099	00210	00261	00299	00308	-	-	
125	-	000000	00005	-	00011	00035	00039	00048	00051	00057	-	-	
126	-	000000	00004	-	00007	00011	00011	00014	00016	00016	-	-	
127	-	000000	00024	000041	00126	00176	00284	00325	00359	00376	-	-	
128	-	000000	00007	00036	00090	00122	00204	00240	00270	00287	-	-	
129	-	000000	00004	-	00025	00016	00004	00005	00004	00004	-	-	

TABLE 8. (Continued)

AIM CABLE ANCH AND BEAM SIMULATIONAL CASE 5 337005 1-22-71		DISPLACEMENT POTS			FINAL POINT		
GADE NUM	SCAN V11	SCAN V12	SCAN 013	SCAN	SCAN	SCAN	SCAN
% LOAD	110	960	900				
PSI	000	000	000				
101	-	0*0109	-	0*0120	-	0*0031	
102	-	0*2196	-	0*1371	-	0*0058	
103	-	0*2321	-	0*1372	-	0*0096	
104	-	0*2157	-	0*1351	-	0*0064	
105	-	0*2345	-	0*1371	-	0*0082	
106	-	0*4410	-	0*2730	-	0*0407	
107	-	0*4204	-	0*2294	-	0*0347	
108	-	0*4413	-	0*2724	-	0*0316	
109	-	0*0072	-	0*0415	-	0*0150	
110	-	0*2673	-	0*1641	-	0*0241	
111	-	0*2506	-	0*1252	-	0*0212	
112	-	0*2608	-	0*1407	-	0*0209	
113	-	0*0193	-	0*0165	-	0*0077	
114	-	0*0047	-	0*0079	-	0*0099	
115	-	0*0177	-	0*0088	-	0*0051	
116	-	0*0018	-	0*0029	-	0*0061	
117	-	0*0135	-	0*0155	-	0*0064	
118	-	0*0385	-	0*0251	-	0*0093	
119	-	0*0291	-	0*0164	-	0*0071	
120	-	0*0503	-	0*0182	-	0*0062	
121	-	0*0064	-	0*0058	-	0*0041	
122	-	0*0336	-	0*0032	-	0*0028	
123	-	0*0420	-	0*0446	-	0*0071	
124	-	0*0303	-	0*0180	-	0*0039	
125	-	0*0057	-	0*0046	-	0*0034	
126	-	0*0009	-	0*0000	-	0*0014	
127	-	0*0369	-	0*0419	-	0*0048	
128	-	0*0263	-	0*0153	-	0*0014	
129	-	0*0007	-	0*0007	-	0*0014	

TABLE 8. (Continued)

AIM CABLE, ARCH AND BEAM SINGULAR, CASE 5 337005 1-22-71										SINGLE STRAIN GAGES FINAL PRINT											
GAGE NUM		SCAN 001		SCAN 002		SCAN 003		SCAN 004		SCAN 005		SCAN 006		SCAN 007		SCAN 008		SCAN 009		SCAN 010	
% LOAD	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI	000 PSI									
301	-	84	-	409	-	439	-	649	-	879	-	1'130	-	1'255	-	1'297	-	1'360	-	1'360	-
302	-	21	-	167	-	293	-	502	-	586	-	753	-	837	-	879	-	921	-	921	-
303	-	42	-	42	-	167	-	356	-	460	-	628	-	690	-	753	-	795	-	795	-
304	-	42	-	188	-	356	-	565	-	774	-	941	-	1'109	-	1'130	-	1'234	-	1'234	-
305	-	21	-	409	-	398	-	566	-	816	-	1'067	-	1'130	-	1'255	-	1'255	-	1'255	-
306	-	63	-	167	-	398	-	502	-	628	-	858	-	1'004	-	962	-	1'004	-	1'004	-
307	-	21	-	409	-	377	-	628	-	795	-	1'067	-	1'130	-	1'213	-	1'318	-	1'318	-
308	-	63	-	126	-	335	-	523	-	690	-	921	-	1'025	-	1'109	-	1'172	-	1'172	-
309	-	21	-	146	-	230	-	398	-	523	-	628	-	732	-	774	-	816	-	816	-
310	0	42	-	126	-	439	-	544	-	711	-	921	-	1'004	-	1'109	-	1'151	-	1'151	-
311	-	42	-	169	-	418	-	628	-	846	-	1'088	-	1'151	-	1'255	-	1'297	-	1'297	-
312	-	102	-	193	-	502	-	628	-	732	-	962	-	1'025	-	1'088	-	1'109	-	1'109	-
313	-	21	-	167	-	418	-	544	-	795	-	1'046	-	1'088	-	1'213	-	1'255	-	1'255	-
314	-	42	-	209	-	335	-	523	-	711	-	900	-	1'004	-	1'151	-	1'151	-	1'151	-
315	-	21	-	167	-	377	-	544	-	795	-	983	-	1'151	-	1'172	-	1'276	-	1'276	-
316	-	21	-	246	-	314	-	439	-	649	-	774	-	858	-	941	-	983	-	983	-
317	0	-	-	21	-	42	-	21	-	0	-	21	-	0	-	0	-	105	-	63	-
318	-	21	-	0	-	0	-	84	-	105	-	63	-	84	-	105	-	105	-	84	-
319	-	63	-	84	-	105	-	167	-	209	-	167	-	167	-	105	-	167	-	167	-
320	-	42	-	105	-	105	-	126	-	146	-	63	-	63	-	21	-	21	-	21	-
321	-	21	-	167	-	272	-	439	-	565	-	711	-	774	-	795	-	858	-	858	-
322	0	-	-	167	-	335	-	502	-	544	-	711	-	753	-	774	-	816	-	816	-
323	21	-	-	142	-	146	-	167	-	230	-	230	-	230	-	314	-	335	-	335	-
324	21	-	-	92	-	105	-	188	-	356	-	356	-	377	-	398	-	439	-	439	-
325	0	-	-	63	-	63	-	84	-	105	-	230	-	230	-	272	-	335	-	335	-
326	0	-	-	42	-	126	-	240	-	335	-	377	-	418	-	502	-	544	-	544	-
327	0	-	-	84	-	167	-	251	-	314	-	356	-	398	-	502	-	502	-	502	-
328	0	-	-	42	-	42	-	42	-	42	-	42	-	167	-	167	-	251	-	251	-
329	-	21	-	21	-	63	-	84	-	105	-	167	-	167	-	293	-	251	-	251	-
330	0	-	-	42	-	21	-	42	-	105	-	42	-	84	-	84	-	63	-	63	-
331	-	42	-	84	-	42	-	42	-	105	-	63	-	63	-	84	-	105	-	105	-
332	0	-	-	0	-	42	-	105	-	84	-	167	-	167	-	167	-	209	-	209	-

TABLE 8. (Continued)

AIN CABLE ARCH AND BEAM SIMULATIONAL CASE 5		337005 1-22-71		SINGLE STRAIN GAGES			FINAL PRINT	
GALE NUM	SCAN	011	SCAN	012	SCAN	013	SCAN	SCAN
% LOAD	PSI	120 000	120 000	060 000	060 000	000 000	000 000	000 000
301	-	2,360	-	732	-	21		
302	-	900	-	792	-	21		
303	-	795	-	618	-	0		
304	-	1,151	-	786	-	42		
305	-	2,297	-	732	-	0		
306	-	1,004	-	244	-	63		
307	-	1,255	-	690	-	21		
308	-	1,151	-	786	-	42		
309	-	858	-	481	-	0		
310	-	1,109	-	244	-	21		
311	-	1,318	-	670	-	42		
312	-	1,046	-	670	-	293		
313	-	1,297	-	670	-	42		
314	-	1,088	-	262	-	42		
315	-	1,276	-	711	-	21		
316	-	962	-	981	-	21		
317	-	84	-	42	-	105		
318	-	84	-	0	-	84		
319	-	126	-	21	-	84		
320	-	21	-	42	-	21		
321	-	795	-	681	-	63		
322	-	795	-	618	-	0		
323	-	314	-	188	-	21		
324	-	439	-	314	-	188		
325	-	314	-	150	-	63		
326	-	418	-	467	-	0		
327	-	418	-	167	-	42		
328	-	209	-	109	-	21		
329	-	272	-	188	-	42		
330	-	42	-	42	-	0		
331	-	84	-	42	-	0		
332	-	167	-	426	-	42		

TABLE 8. (Continued)

A/W CABLE-ARCH AND BEAM SINGULARITY CASE 5 337/005 1-22-71	RECTANGULAR ROSETTES										FINAL PRINT!	
	SCAN 001	SCAN 002	SCAN 003	SCAN 004	SCAN 005	SCAN 006	SCAN 007	SCAN 008	SCAN 009	SCAN 010		
% LOAD PSI	900 000	080 000	040 000	060 000	080 000	100 000	110 000	120 000	122 000			
101	27	-	71	-	69	-	161	-	225	-	345	-
102	4	-	116	-	212	-	404	-	524	-	685	-
103	11	-	22	-	71	-	120	-	149	-	170	-
104	-	67	22	-	3	-	12	-	9	-	13	-
105	-	67	134	-	190	-	261	-	316	-	449	-
106	-	40	56	-	81	-	120	-	20	-	51	-
107	-	56	86	-	75	-	84	-	79	-	199	-
108	-	24	61	-	51	-	180	-	215	-	81	-
109	-	40	46	-	230	-	392	-	504	-	684	-
110	47	-	30	-	8	-	181	-	145	-	184	-
111	-	24	118	-	205	-	308	-	374	-	510	-
112	1	-	24	-	45	-	98	-	95	-	145	-
113	-	16	71	-	80	-	195	-	139	-	182	-
114	-	42	87	-	84	-	105	-	94	-	182	-
115	-	4	6	-	80	-	169	-	145	-	184	-
116	-	27	92	-	89	-	159	-	152	-	204	-
117	-	11	96	-	155	-	184	-	254	-	298	-
118	-	6	5	-	7	-	40	-	41	-	9	-
119	-	35	43	-	301	-	446	-	692	-	796	-
120	-	35	44	-	74	-	179	-	276	-	297	-
121	-	35	50	-	113	-	133	-	208	-	250	-
122	-	77	81	-	73	-	67	-	60	-	57	-
123	-	21	85	-	144	-	217	-	261	-	386	-
124	-	4	96	-	355	-	470	-	739	-	894	-
125	-	11	56	-	106	-	127	-	224	-	254	-
126	-	2	4	-	43	-	67	-	93	-	9	-
127	0	-	186	-	319	-	499	-	606	-	771	-
128	0	-	198	-	118	-	198	-	209	-	322	-
129	0	-	46	-	101	-	156	-	209	-	225	-
130	-	60	40	-	105	-	170	-	250	-	245	-
131	-	52	6	-	6	-	7	-	0	-	11	-
132	4	-	113	-	626	-	905	-	1,191	-	1,411	-
133	-	36	69	-	67	-	64	-	76	-	80	-
134	-	24	449	-	277	-	494	-	579	-	108	-
135	-	40	40	-	105	-	170	-	250	-	314	-
136	-	52	6	-	6	-	7	-	0	-	11	-
137	3	-	113	-	623	-	905	-	1,191	-	1,411	-
138	-	31	62	-	123	-	126	-	183	-	88	-
139	-	31	126	-	252	-	389	-	504	-	661	-
140	-	47	115	-	115	-	67	-	67	-	794	-
141	-	16	46	-	104	-	92	-	88	-	81	-
142	-	47	141	-	333	-	498	-	597	-	792	-
143	-	16	47	-	115	-	158	-	229	-	332	-
144	-	0	8	-	8	-	3	-	3	-	3	-
145	-	43	0	-	8	-	3	-	3	-	3	-

TABLE 8. (Continued)

ATM CABLE - ARCH AND BEAM SINGULAR CASE 5 33705 1-22-71				RECTANGULAR ROSETTES				FINAL PRINT	
DATE NUM	SCAN 011	SCAN 012	SCAN 013	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN
101	-	408	-	499	-	7			
102	-	747	-	619	-	87			
103	-	176	-	660	-	40			
104	-	7	-	42	-	94			
105	-	476	-	461	-	87			
106	-	213	-	220	-	7			
107	-	89	-	64	-	51			
108	-	358	-	436	-	146			
109	-	767	-	563	-	10			
110	-	205	-	213	-	68			
111	-	11	-	17	-	27			
112	-	536	-	463	-	16			
113	-	146	-	92	-	16			
114	-	195	-	96	-	16			
115	-	83	-	65	-	0			
116	-	203	-	150	-	36			
117	-	796	-	664	-	58			
118	-	297	-	157	-	11			
119	-	16	-	22	-	22			
120	-	730	-	49	-	40			
121	-	332	-	269	-	134			
122	-	199	-	99	-	87			
123	-	54	-	53	-	42			
124	-	402	-	451	-	62			
125	-	937	-	561	-	93			
126	-	266	-	155	-	78			
127	-	6	-	12	-	23			
128	-	793	-	418	-	0			
129	-	299	-	207	-	0			
130	-	247	-	196	-	0			
131	-	64	-	58	-	45			
132	-	1691	-	1412	-	93			
133	-	58	-	5	-	1			
134	-	112	-	7	-	23			
135	-	1716	-	1003	-	4			
136	-	186	-	121	-	27			
137	-	764	-	541	-	11			
138	-	145	-	86	-	27			
139	-	985	-	76	-	4			
140	-	370	-	295	-	11			
141	-	112	-	7	-	23			
142	-	1716	-	1003	-	4			
143	-	186	-	121	-	27			
144	-	764	-	541	-	11			
145	-	145	-	86	-	27			
146	-	985	-	76	-	4			
147	-	370	-	295	-	11			
148	-	112	-	7	-	23			
149	-	1716	-	1003	-	4			
150	-	186	-	121	-	27			
151	-	764	-	541	-	11			
152	-	145	-	86	-	27			
153	-	985	-	76	-	4			
154	-	370	-	295	-	11			
155	-	112	-	7	-	23			
156	-	1716	-	1003	-	4			
157	-	186	-	121	-	27			
158	-	764	-	541	-	11			
159	-	145	-	86	-	27			
160	-	985	-	76	-	4			
161	-	370	-	295	-	11			
162	-	112	-	7	-	23			
163	-	1716	-	1003	-	4			
164	-	186	-	121	-	27			
165	-	764	-	541	-	11			
166	-	145	-	86	-	27			
167	-	985	-	76	-	4			
168	-	370	-	295	-	11			
169	-	112	-	7	-	23			
170	-	1716	-	1003	-	4			
171	-	186	-	121	-	27			
172	-	764	-	541	-	11			
173	-	145	-	86	-	27			
174	-	985	-	76	-	4			
175	-	370	-	295	-	11			
176	-	112	-	7	-	23			
177	-	1716	-	1003	-	4			
178	-	186	-	121	-	27			
179	-	764	-	541	-	11			
180	-	145	-	86	-	27			
181	-	985	-	76	-	4			
182	-	370	-	295	-	11			
183	-	112	-	7	-	23			
184	-	1716	-	1003	-	4			
185	-	186	-	121	-	27			
186	-	764	-	541	-	11			
187	-	145	-	86	-	27			
188	-	985	-	76	-	4			
189	-	370	-	295	-	11			
190	-	112	-	7	-	23			
191	-	1716	-	1003	-	4			
192	-	186	-	121	-	27			
193	-	764	-	541	-	11			
194	-	145	-	86	-	27			
195	-	985	-	76	-	4			
196	-	370	-	295	-	11			
197	-	112	-	7	-	23			
198	-	1716	-	1003	-	4			
199	-	186	-	121	-	27			
200	-	764	-	541	-	11			
201	-	145	-	86	-	27			
202	-	985	-	76	-	4			
203	-	370	-	295	-	11			
204	-	112	-	7	-	23			
205	-	1716	-	1003	-	4			
206	-	186	-	121	-	27			
207	-	764	-	541	-	11			
208	-	145	-	86	-	27			
209	-	985	-	76	-	4			
210	-	370	-	295	-	11			
211	-	112	-	7	-	23			
212	-	1716	-	1003	-	4			
213	-	186	-	121	-	27			
214	-	764	-	541	-	11			
215	-	145	-	86	-	27			
216	-	985	-	76	-	4			
217	-	370	-	295	-	11			
218	-	112	-	7	-	23			
219	-	1716	-	1003	-	4			
220	-	186	-	121	-	27			
221	-	764	-	541	-	11			
222	-	145	-	86	-	27			
223	-	985	-	76	-	4			
224	-	370	-	295	-	11			
225	-	112	-	7	-	23			
226	-	1716	-	1003	-	4			
227	-	186	-	121	-	27			
228	-	764	-	541	-	11			
229	-	145	-	86	-	27			
230	-	985	-	76	-	4			
231	-	370	-	295	-	11			
232	-	112	-	7	-	23			
233	-	1716	-	1003	-	4			
234	-	186	-	121	-	27			
235	-	764	-	541	-	11			
236	-	145	-	86	-	27			
237	-	985	-	76	-	4			
238	-	370	-	295	-	11			
239	-	112	-	7	-	23			
240	-	1716	-	1003	-	4			
241	-	186	-	121	-	27			
242	-	764	-	541	-	11			
243	-	145	-	86	-	27			
244	-	985	-	76	-	4			
245	-	370	-	295	-	11			
246	-	112	-	7	-	23			
247	-	1716	-	1003	-	4			
248	-	186	-	121	-	27			
249	-	764	-	541	-	11			
250	-	145	-	86	-	27			
251	-	985	-	76	-	4			
252	-	370	-	295	-	11			
253	-	112	-	7	-	23			
254	-	1716	-	1003	-	4			
255	-	186	-	121	-	27			
256	-	764	-	541	-	11			
257	-	145	-	86	-	27			
258	-	985	-	76	-	4			
259	-	370	-	295	-	11			
260	-	112	-	7	-	23			
261	-	1716	-	1003	-	4			
262	-	186	-	121	-	27			
263	-	764	-	541	-	11			
264	-	145	-	86	-	27			
265	-	985	-	76	-	4			
266	-	370	-	295	-	11			
267	-	112	-	7	-	23			
268	-	1716	-	1003	-	4			
269	-	186	-	121	-	27			
270	-	764	-	541	-	11			
271	-	145	-	86	-	27			
272	-	985	-	76	-	4			
273	-	370	-	295	-	11			
274	-	112	-	7	-	23			
275	-	1716	-	1003	-	4			
276	-	186	-	121	-	27			
277	-	764	-	541	-	11			
278	-	145	-	86	-	27			
279	-	985	-	76	-	4			
280	-	370	-	295	-	11			
281	-	112	-	7	-	23			
282	-</								

TABLE 8. (Continued)

AIM CABLE ARCH AND BEAM STRUCTURAL CASE 5		337005 1-22-71		RECTANGULAR ROSETTES						FINAL PRINT	
GAGE NUM	SCAN 001	SCAN 002	SCAN 003	SCAN 004	SCAN 005	SCAN 006	SCAN 007	SCAN 008	SCAN 009	SCAN 010	SCAN 011
\$ LOAD	000	000	000	000	000	000	000	100	110	120	125
PSI	000	000	000	000	000	000	000	000	000	000	000
337	47	87	49	-	22	-	49	-	210	-	326
338	15	7	18	-	72	-	169	-	321	-	392
339	16	40	33	-	25	60	56	33	56	71	524
340	45	39	22	-	9	33	22	22	42	42	382
341	56	173	127	-	310	333	1,453	1,585	1,605	1,779	524
342	36	-	2	64	73	358	351	362	407	407	71
343	11	95	65	123	130	548	617	622	686	686	407
344	-	23	-	7	20	-	13	20	19	17	18
345	27	143	165	-	7	14	-	100	85	209	209
346	4	-	16	-	71	149	-	204	-	384	-
347	11	80	118	71	95	-	103	150	150	150	502
348	-	23	-	39	47	-	57	-	43	-	158
349	23	-	78	111	149	235	283	335	406	406	441
350	118	-	76	45	69	77	154	165	187	187	185
351	-	24	16	33	40	79	65	85	110	110	145
352	71	-	46	67	84	-	72	-	79	-	79
353	-	48	0	67	84	-	83	-	87	-	90
354	-	9	78	143	200	-	227	305	377	479	501
355	-	102	47	44	91	54	7	60	92	123	123
356	-	56	16	50	60	87	149	158	214	214	189
357	-	41	-	90	81	78	87	81	87	-	90
358	-	16	40	119	172	221	296	342	356	383	383
359	-	16	-	9	6	78	-	47	64	98	123
360	-	16	-	25	57	47	112	124	139	155	160
361	-	90	-	54	73	90	-	81	-	83	-
362	-	9	-	16	16	-	22	6	59	0	6
363	-	40	-	16	16	-	72	119	-	129	-
364	-	25	-	16	16	25	57	35	35	34	57
365	-	9	-	0	90	54	17	13	13	13	17
366	-	81	-	9	16	16	40	80	63	102	19
367	-	19	-	53	16	-	16	71	-	71	-
368	-	50	-	22	16	16	56	80	63	62	50
369	-	54	-	67	90	-	90	49	51	42	54

TABLE 8. (Concluded)

AIM CABLE ARCH AND BEAM SIGNUMINAL CASE 5		337005 1-22-74		RECTANGULAR ROSETTES		FINAL PRINT	
GAPE NUM	SCAN 011	SCAN 012	SCAN 013	SCAN	SCAN	SCAN	SCAN
% LOAD	110 000	060 000	000 000				
PSI							
337	-	367	-	147	80		
338	-	508	-	197	13		
339	-	70	-	25	33		
340	-	32	-	54	67		
341	-	2,765	8,053	-	2,701		
342	-	390	383	-	453		
343	-	686	635	-	1,124		
344	-	18	-	21	-	22	
345	-	263	-	10	-	102	
346	-	431	-	439	-	71	
347	-	134	-	115	-	87	
348	-	43	-	53	-	48	
349	-	465	-	435	-	72	
350	-	190	-	140	-	22	
351	-	138	-	97	-	25	
352	-	75	-	90	-	81	
353	-	486	-	176	-	31	
354	-	76	-	9	-	31	
355	-	205	-	95	-	31	
356	-	88	-	79	-	45	
357	-	323	-	181	-	4	
358	-	20	-	24	-	27	
359	-	251	-	103	-	11	
360	-	86	-	88	-	22	
	-	1	-	24	-	31	
	-	93	-	56	-	31	
	-	46	-	40	-	0	
	-	15	-	39	-	45	
	-	12	-	9	-	27	
	-	127	-	40	-	4	
	-	65	-	25	-	11	
	-	38	-	54	-	23	

TABLE 9. TEST DATA, LOAD CASE 6

AIM CABLE ARCH AND BEAM SINGULAR CASE 6 337006 1-22-71						LOAD CELLS IN POUNDS FINAL PRINT																	
GAGE NUM		SCAN 014		SCAN 015		SCAN 016		SCAN 017		SCAN 019		SCAN 021		SCAN 022		SCAN 023		SCAN 024					
% LOAD	PSI	000	000	040	000	060	000	080	000	100	000	110	000	120	000	120	000	120	000	120	000		
001	-	3	-	400	-	624	-	927	-	1,249	-	1,573	-	1,734	-	1,897	-	1,977	-	1,977	-		
002	-	1	-	1	-	1	-	1	-	0	-	1	-	1	-	2	-	2	-	2	-		
003	-	1	-	71	-	147	-	224	-	313	-	392	-	435	-	472	-	493	-	493	-		
004	0	0	44	102	162	237	297	325	325	355	355	355	355	371	371	371	371	371	371	371	371		
005	1	449	500	755	1,030	1,304	1,430	1,560	1,560	1,627	1,627	1,627	1,627	1,627	1,627	1,627	1,627	1,627	1,627	1,627	1,627		
006	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-		
007	-	0	-	3	-	3	-	3	-	3	-	4	-	3	-	4	-	4	-	4	-		
008	0	-	37	-	77	-	117	-	157	-	212	-	230	-	253	-	262	-	262	-	262	-	
009	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	
010	0	-	21	-	47	-	71	-	98	-	126	-	138	-	152	-	157	-	157	-	157	-	

AIM CABLE ARCH AND BEAM SINGULAR CASE 6 337006 1-22-71						LOAD CELLS IN POUNDS FINAL PRINT																	
GAGE NUM		SCAN 026		SCAN 028		SCAN 029		SCAN															
% LOAD	PSI	000	000	040	000	060	000	080	000	100	000	110	000	120	000	120	000	120	000	120	000		
001	-	1,748	-	939	-	111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
002	-	2	-	0	-	0	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-		
003	-	434	-	444	-	444	-	444	-	444	-	444	-	444	-	444	-	444	-	444	-		
004	-	328	-	375	-	375	-	375	-	375	-	375	-	375	-	375	-	375	-	375	-		
005	-	1,437	-	1,72	-	1,72	-	1,72	-	1,72	-	1,72	-	1,72	-	1,72	-	1,72	-	1,72	-		
006	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-		
007	-	4	-	3	-	3	-	3	-	3	-	3	-	3	-	3	-	3	-	3	-		
008	-	230	-	244	-	244	-	244	-	244	-	244	-	244	-	244	-	244	-	244	-		
009	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	
010	-	138	-	76	-	76	-	76	-	76	-	76	-	76	-	76	-	76	-	76	-		

TABLE 9. (Continued)

AIL CABLE, ARCH AND BEAM SIMULATIONAL CASE 6 337006 1-22-71		DISPLACEMENT POTS						FINAL PRINT		
GAGE NUM	SCAN 014	SCAN 015	SCAN 016	SCAN 017	SCAN 018	SCAN 021	SCAN 022	SCAN 023	SCAN 024	
% LOAD PSI	000 000	080 080	040 000	060 000	080 000	100 000	110 000	120 000	120 000	
101	000002	000002	-	0,0002	-	0,0055	-	0,0085	-	0,0097
102	000000	000308	0,0668	0,1024	-	0,1417	0,1799	0,1987	0,2184	0,2284
103	000003	000316	0,0688	0,1059	0,1471	0,1877	0,2074	0,2275	0,2376	
104	-	000002	000494	0,0642	0,0989	0,1173	0,1757	0,1938	0,2134	0,2233
105	-	000000	000321	0,0689	0,1069	0,1485	0,1895	0,2086	0,2286	0,2396
106	-	000000	000630	0,1377	0,2132	0,2970	0,3773	0,4151	0,4598	0,4922
107	-	000003	000594	0,1316	0,2058	0,2876	0,3671	0,4043	0,4479	0,4699
108	000000	00075	0,1436	0,2203	0,3056	0,3882	0,4253	0,4696	0,4911	
109	-	000002	000010	0,0010	0,0012	0,0009	0,0010	0,0007	0,0005	0,0007
110	-	000000	000403	0,0867	0,1343	0,1866	0,2380	0,2895	0,3033	
111	-	000002	000408	0,0871	0,1342	0,1859	0,2379	0,2611	0,2883	0,3022
112	000000	000412	0,0875	0,1350	0,1868	0,2386	0,2617	0,2894	0,3034	
113	000000	000002	0,0004	0,0005	0,0000	-	0,0004	-	0,0035	-
114	-	000000	000389	0,0560	0,0832	0,1126	0,1444	-	0,1751	0,1832
115	-	000002	000321	-	0,0624	-	0,1253	-	0,1602	-
116	-	000003	000325	-	0,0575	-	0,1493	-	0,1755	-
117	-	000003	-	0,0420	-	0,0615	-	0,0944	-	0,1742
118	000000	-	000321	-	0,0665	-	0,1363	-	0,1742	-
119	-	000002	-	000305	-	0,0608	-	0,1239	-	0,1572
120	-	000009	-	000347	-	0,0698	-	0,1407	-	0,1602
121	-	000003	-	00006	-	0,0643	-	0,1195	-	0,1492
122	-	000002	-	00009	-	0,0006	-	0,0015	-	0,020
123	000002	-	000459	-	0,0541	-	0,0998	-	0,1742	-
124	-	000000	-	000480	-	0,0572	-	0,0849	-	0,1781
125	-	000002	-	00009	-	0,0004	-	0,0007	-	0,1781
126	000000	000000	-	000002	-	0,0094	-	0,0020	-	0,0040
127	000000	-	000089	-	0,0179	-	0,0265	-	0,0459	-
128	000000	-	00091	-	0,0201	-	0,0297	-	0,0407	-
129	000000	-	00009	-	0,0014	-	0,0016	-	0,0004	-

TABLE 9. (Continued)

AIN CABLE-ARCH AND BEAM STRUCTURAL CASE 6 337006 1-22-71		DISPLACEMENT POTS FINAL PRINT					
GAGE NUM	SCAN 026	SCAN 028	SCAN 029	SCAN	SCAN	SCAN	SCAN
% LOAD	110	080	060	-	-	-	-
PSI	000	080	060	000	000	000	000
101	-	0.0099	0.0073	-	0.0019	-	-
102	-	0.2044	0.1119	0.0038	-	-	-
103	-	0.2124	0.1356	0.0038	-	-	-
104	-	0.2000	0.1092	0.0041	-	-	-
105	-	0.2140	0.1173	0.0034	-	-	-
106	-	0.4361	0.2554	0.0140	-	-	-
107	-	0.4247	0.2473	0.0142	-	-	-
108	-	0.4486	0.2960	0.0149	-	-	-
109	-	0.0123	0.0123	-	0.0080	-	-
110	-	0.2736	0.1297	0.0055	-	-	-
111	-	0.2736	0.1605	0.0101	-	-	-
112	-	0.2756	0.1926	0.0103	-	-	-
113	-	0.0053	0.0046	-	0.0016	-	-
114	-	0.1654	0.1004	-	0.0271	-	-
115	-	0.1625	0.1110	-	0.0296	-	-
116	-	0.1640	0.0992	-	0.0306	-	-
117	-	0.0029	0.0112	-	0.0032	-	-
118	-	0.1664	0.1199	-	0.0301	-	-
119	-	0.0172	0.0108	-	0.0289	-	-
120	-	0.2013	0.1424	-	0.0333	-	-
121	-	0.0052	0.0044	-	0.0041	-	-
122	-	0.0009	0.0007	-	0.0028	-	-
123	-	0.01603	0.0973	-	0.0209	-	-
124	-	0.1656	0.0997	-	0.0243	-	-
125	-	0.0012	0.0007	-	0.0014	-	-
126	-	0.0036	0.0022	-	0.0002	-	-
127	-	0.0514	0.0331	-	0.0073	-	-
128	-	0.0568	0.0355	-	0.0093	-	-
129	-	0.0021	0.0041	-	0.0026	-	-

TABLE 9. (Continued)

AIM CABLE ARCH AND BEAM SITUATIONAL CASE 6		337006		4-22-71		SINGLE STRAIN GAGES						FINAL PHINT				
STRAIN NUM	SCAN 014	SCAN 015	SCAN 016	SCAN 017	SCAN 019	SCAN 021	SCAN 022	SCAN 023	SCAN 024	SCAN 025	SCAN 026	SCAN 027	SCAN 028			
% LOAD PSI	000 000	000 000	040 000	060 000	080 000	100 000	110 000	120 000	120 000	120 000	120 000	120 000	120 000			
201	-	21	-	167	-	418	-	607	-	837	-	962	-	1,151		
202	-	21	-	188	-	377	-	565	-	753	-	900	-	941		
203	0	-	167	-	293	-	481	-	628	-	816	-	879	-	962	
204	21	21	146	272	-	439	-	649	-	816	-	921	-	1,004		
205	21	21	146	-	335	-	460	-	586	-	732	-	774	-	921	
206	21	21	189	502	-	732	-	1,004	-	1,213	-	1,402	-	1,527		
207	-	21	167	-	398	-	670	-	858	-	1,130	-	1,234	-	1,381	
208	21	21	167	-	377	-	586	-	774	-	1,004	-	1,109	-	1,193	
209	-	63	-	146	-	335	-	460	-	586	-	858	-	921	-	921
210	0	21	189	-	356	-	544	-	711	-	900	-	1,004	-	1,151	
211	0	-	166	-	398	-	586	-	837	-	1,004	-	1,151	-	1,569	
212	42	42	146	-	335	-	502	-	628	-	753	-	837	-	962	
213	21	-	409	-	481	-	670	-	941	-	1,151	-	1,255	-	1,381	
214	63	409	418	-	586	-	774	-	962	-	1,046	-	1,130	-	1,213	
215	-	63	-	146	-	293	-	439	-	565	-	711	-	792	-	941
216	0	-	409	481	-	711	-	962	-	1,213	-	1,360	-	1,465	-	1,511
217	-	21	-	64	-	146	-	188	-	272	-	293	-	356	-	356
218	-	21	-	167	-	209	-	314	-	418	-	481	-	544	-	1,046
219	-	21	-	388	-	377	-	544	-	690	-	921	-	962	-	1,423
220	-	21	-	64	-	251	-	377	-	460	-	565	-	607	-	607
221	-	21	-	451	523	-	837	-	1,130	-	1,444	-	1,485	-	1,632	
222	21	314	607	-	858	-	1,172	-	1,444	-	1,506	-	1,674	-	1,716	
223	0	188	398	607	-	879	-	1,151	-	1,255	-	1,381	-	1,423	-	1,423
224	21	409	481	711	-	941	-	1,193	-	1,297	-	1,402	-	1,465	-	1,465
225	-	21	-	42	63	-	63	-	146	-	209	-	209	-	251	
226	-	21	-	0	63	-	63	-	42	-	21	-	63	-	84	
227	-	21	-	63	-	42	-	63	-	84	-	84	-	84	-	105
228	21	63	84	-	84	-	230	-	251	-	251	-	335	-	272	
229	42	64	21	-	42	-	42	-	21	-	0	-	21	-	42	
230	-	21	-	21	-	0	-	42	-	42	-	105	-	126	-	63
231	-	42	42	-	21	-	21	-	21	-	0	-	42	-	42	
232	0	-	63	-	63	-	63	-	84	-	84	-	84	-	84	
															105	

TABLE 9. (Continued)

A1M CABLE ARCH AND BEAM SIMULUMAL CASE 6		337006 1-22-74		SINGLE STRAIN GAGES			FINAL PRINT	
GAGE NUM	SCAN U26	SCAN U28	SCAN 029	SCAN	SCAN	SCAN	SCAN	SCAN
% LOAD	110 000	000 000	000 000					
PSI								
301	-	1,151	-	0.07	-	21		
302	-	962	-	265	-	63		
303	-	921	-	302	-	42		
304	-	921	-	439	-	0		
305	-	656	-	439	-	21		
306	-	1,402	-	900	-	105		
307	-	1,234	-	711	-	42		
308	-	1,109	-	697	-	21		
309	-	696	-	981	-	42		
310	-	1,04	-	365	-	42		
311	-	1,193	-	949	-	21		
312	-	983	-	949	-	188		
313	-	1,255	-	732	-	42		
314	-	1,088	-	607	-	84		
315	-	774	-	377	-	21		
316	-	1,339	-	732	-	105		
317	-	1,293	-	326	-	0		
318	-	502	-	251	-	0		
319	-	983	-	286	-	42		
320	-	565	-	914	-	0		
321	-	1,485	-	174	-	42		
322	-	1,548	-	837	-	21		
323	-	1,234	-	244	-	146		
324	-	1,319	-	690	-	42		
325	-	209	-	409	-	21		
326	-	42	-	21	-	0		
327	-	126	-	167	-	105		
328	-	293	-	451	-	42		
329	0			442	-	42		
330	-	84	-	105	-	0		
331	-	21	-	84	-	84		
332	-	63	-	21	-	21		

TABLE 9. (Continued)

A11 CAPST. ARCH AND BEAM 2 INCHES THICK		CASE 6		337006		1-22-72		RECTANGULAR ROSETTES				FINAL PHASE	
STATE NO.	SCAN 014	STATE 015	SCAN 016	SCAN 017	SCAN 019	SCAN 021	SCAN 022	STATE 023	SCAN 025	STATE 026	SCAN 027		
X LOAD	000	000	040	060	080	100	110	120	125	130	135		
PSI	000	000	000	000	000	000	000	000	000	000	000	000	000
101	49	56	92	201	301	424	425	-	495	-	558	-	-
102	18	288	470	736	1,042	1,416	1,480	-	1,620	-	1,691	-	-
103	35	416	189	268	370	497	528	-	566	-	567	-	-
104	1	56	14	0	224	346	532	694	787	857	791	-	-
105	93	7	24	25	2	61	24	118	80	92	92	-	-
106	46	40	99	174	236	335	335	386	386	370	370	-	-
107	9	94	91	84	77	75	75	-	74	-	78	-	-
108	40	99	248	350	466	637	692	-	715	-	738	-	-
109	25	57	127	197	284	331	354	-	400	-	453	-	-
110	95	129	4	1	2	1	1	-	1	-	406	-	-
111	40	59	396	454	620	794	824	-	886	-	908	-	-
112	22	35	167	171	224	296	307	-	339	-	248	-	-
113	67	77	82	90	97	82	82	-	85	-	84	-	-
114	15	56	97	190	256	263	263	-	377	-	399	-	-
115	16	179	746	1,122	1,555	1,985	2,229	-	2,43	-	2,503	-	-
116	0	160	325	466	650	861	917	-	1,026	-	1,055	-	-
117	19	93	5	5	5	5	5	-	5	-	5	-	-
118	51	157	238	330	392	461	487	-	480	-	546	-	-
119	90	155	262	373	451	491	491	-	491	-	532	-	-
120	9	92	78	74	73	75	74	-	75	-	75	-	-
121	27	114	223	345	473	572	689	-	766	-	766	-	-
122	4	135	745	1,153	1,598	2,051	2,278	-	2,51	-	2,572	-	-
123	11	420	261	449	567	740	795	-	873	-	905	-	-
124	22	6	3	2	1	1	1	-	0	-	0	-	-
125	7	215	559	746	1,107	1,311	1,440	-	1,555	-	1,583	-	-
126	87	66	191	220	330	344	403	-	441	-	447	-	-
127	40	75	184	264	389	483	549	-	558	-	558	-	-
128	39	61	80	79	79	79	79	-	79	-	79	-	-
129	16	321	658	971	1,293	1,676	1,817	-	2,029	-	2,099	-	-
130	16	150	283	409	528	677	756	-	823	-	850	-	-
131	45	2	0	1	1	1	1	-	1	-	1	-	-
132	19	206	1,067	1,623	2,214	2,779	3,052	-	3,381	-	3,448	-	-
133	81	68	151	240	253	281	320	-	329	-	330	-	-
134	50	409	458	791	980	1,249	1,366	-	1,529	-	1,559	-	-
135	16	139	146	241	323	471	439	-	441	-	463	-	-
136	16	95	275	394	551	700	795	-	812	-	848	-	-
137	90	42	1	1	2	0	0	-	1	-	1	-	-

TABLE 9. (Continued)

A1H CABLE, ARCH AND BEAM VIMBYVYHAL CASE 6		337,006 1-22-71		RECTANGULAR ROSETTES		FINAL PRINT	
DATE MTH	SPAN 026	SPAN 028	SPAN 029	SCAN	SCAN	SCAN	SCAN
PSI	110	080	080	000	000	000	000
101	-	469	-	325	-	36	
102	-	1,560	-	861	-	58	
103	-	546	-	268	-	11	
104	-	743	-	497	-	67	
105	-	101	-	52	-	31	
106	-	321	-	173	-	31	
107	-	75	-	45	-	13	
108	-	728	-	418	-	13	
109	-	1,458	-	834	-	112	
110	-	365	-	207	-	90	
111	-	865	-	470	-	93	
112	-	229	-	135	-	1	
113	-	319	-	157	-	46	
114	-	92	-	50	-	60	
115	-	396	-	200	-	7	
116	-	2,236	-	1,205	-	87	
117	-	940	-	493	-	40	
118	-	3	-	5	-	6	
119	-	1,492	-	917	-	34	
120	-	972	-	570	-	96	
121	-	508	-	224	-	65	
122	-	73	-	70	-	38	
123	-	689	-	409	-	53	
124	-	2,178	-	1,246	-	103	
125	-	795	-	419	-	125	
126	-	1	-	3	-	9	
127	-	1,455	-	885	-	31	
128	-	89	-	489	-	31	
129	-	306	-	150	-	62	
130	-	1,980	-	912	-	62	
131	-	787	-	412	-	0	
132	-	214	-	119	-	0	
133	-	1,455	-	885	-	63	
134	-	89	-	489	-	30	
135	-	306	-	150	-	61	
136	-	1,980	-	912	-	46	
137	-	787	-	412	-	0	
138	-	214	-	119	-	0	
139	-	1,455	-	885	-	63	
140	-	89	-	489	-	30	
141	-	306	-	150	-	61	
142	-	1,980	-	912	-	46	
143	-	787	-	412	-	0	
144	-	214	-	119	-	0	
145	-	1,455	-	885	-	63	
146	-	89	-	489	-	30	
147	-	306	-	150	-	61	
148	-	1,980	-	912	-	46	
149	-	787	-	412	-	0	
150	-	214	-	119	-	0	
151	-	1,455	-	885	-	63	
152	-	89	-	489	-	30	
153	-	306	-	150	-	61	
154	-	1,980	-	912	-	46	
155	-	787	-	412	-	0	
156	-	214	-	119	-	0	
157	-	1,455	-	885	-	63	
158	-	89	-	489	-	30	
159	-	306	-	150	-	61	
160	-	1,980	-	912	-	46	
161	-	787	-	412	-	0	
162	-	214	-	119	-	0	
163	-	1,455	-	885	-	63	
164	-	89	-	489	-	30	
165	-	306	-	150	-	61	
166	-	1,980	-	912	-	46	
167	-	787	-	412	-	0	
168	-	214	-	119	-	0	
169	-	1,455	-	885	-	63	
170	-	89	-	489	-	30	
171	-	306	-	150	-	61	
172	-	1,980	-	912	-	46	
173	-	787	-	412	-	0	
174	-	214	-	119	-	0	
175	-	1,455	-	885	-	63	
176	-	89	-	489	-	30	
177	-	306	-	150	-	61	
178	-	1,980	-	912	-	46	
179	-	787	-	412	-	0	
180	-	214	-	119	-	0	
181	-	1,455	-	885	-	63	
182	-	89	-	489	-	30	
183	-	306	-	150	-	61	
184	-	1,980	-	912	-	46	
185	-	787	-	412	-	0	
186	-	214	-	119	-	0	
187	-	1,455	-	885	-	63	
188	-	89	-	489	-	30	
189	-	306	-	150	-	61	
190	-	1,980	-	912	-	46	
191	-	787	-	412	-	0	
192	-	214	-	119	-	0	
193	-	1,455	-	885	-	63	
194	-	89	-	489	-	30	
195	-	306	-	150	-	61	
196	-	1,980	-	912	-	46	
197	-	787	-	412	-	0	
198	-	214	-	119	-	0	
199	-	1,455	-	885	-	63	
200	-	89	-	489	-	30	
201	-	306	-	150	-	61	
202	-	1,980	-	912	-	46	
203	-	787	-	412	-	0	
204	-	214	-	119	-	0	
205	-	1,455	-	885	-	63	
206	-	89	-	489	-	30	
207	-	306	-	150	-	61	
208	-	1,980	-	912	-	46	
209	-	787	-	412	-	0	
210	-	214	-	119	-	0	
211	-	1,455	-	885	-	63	
212	-	89	-	489	-	30	
213	-	306	-	150	-	61	
214	-	1,980	-	912	-	46	
215	-	787	-	412	-	0	
216	-	214	-	119	-	0	
217	-	1,455	-	885	-	63	
218	-	89	-	489	-	30	
219	-	306	-	150	-	61	
220	-	1,980	-	912	-	46	
221	-	787	-	412	-	0	
222	-	214	-	119	-	0	
223	-	1,455	-	885	-	63	
224	-	89	-	489	-	30	
225	-	306	-	150	-	61	
226	-	1,980	-	912	-	46	
227	-	787	-	412	-	0	
228	-	214	-	119	-	0	
229	-	1,455	-	885	-	63	
230	-	89	-	489	-	30	
231	-	306	-	150	-	61	
232	-	1,980	-	912	-	46	
233	-	787	-	412	-	0	
234	-	214	-	119	-	0	
235	-	1,455	-	885	-	63	
236	-	89	-	489	-	30	
237	-	306	-	150	-	61	
238	-	1,980	-	912	-	46	
239	-	787	-	412	-	0	
240	-	214	-	119	-	0	
241	-	1,455	-	885	-	63	
242	-	89	-	489	-	30	
243	-	306	-	150	-	61	
244	-	1,980	-	912	-	46	
245	-	787	-	412	-	0	
246	-	214	-	119	-	0	
247	-	1,455	-	885	-	63	
248	-	89	-	489	-	30	
249	-	306	-	150	-	61	
250	-	1,980	-	912	-	46	
251	-	787	-	412	-	0	
252	-	214	-	119	-	0	
253	-	1,455	-	885	-	63	
254	-	89	-	489	-	30	
255	-	306	-	150	-	61	
256	-	1,980	-	912	-	46	
257	-	787	-	412	-	0	
258	-	214	-	119	-	0	
259	-	1,455	-	885	-	63	
260	-	89	-	489	-	30	
261	-	306	-	150	-	61	
262	-	1,980	-	912	-	46	
263	-	787	-	412	-	0	
264	-	214	-	119	-	0	
265	-	1,455	-	885	-	63	
266	-	89	-	489	-	30	
267	-	306	-	150	-	61	
268	-	1,980	-	912	-	46	
269	-	787	-	412	-	0	
270	-	214	-	119	-	0	
271	-	1,455	-	885	-	63	
272	-	89	-	489	-	30	
273	-	306	-	150	-	61	
274	-	1,980	-	912	-	46	
275	-	787	-	412	-	0	
276	-	214	-	119	-	0	
277	-	1,455	-	885	-	63	
278	-	89	-	489	-	30	
279	-	306	-	150	-	61	
280	-	1,980	-	912	-	46	
281	-	787	-	412	-	0	
282	-	214	-	119	-	0	
283	-	1,455	-	885	-	63	
284	-	89	-	489	-	30	
285	-	306	-	150	-	61	
286	-	1,980	-	912	-	46	
287	-	787	-	412	-	0	
288	-	214	-	119	-	0	
289	-	1,455	-	885	-	63	
290	-	89	-	489	-	30	
291	-	306	-	150	-	61	
292	-	1,980	-	912	-	46	
293	-	787	-	412	-	0	
294	-	214	-	119	-	0	
295	-	1,455	-	885	-	63	
296	-	89	-	489	-	30	
297	-	306	-	150	-	61	
298	-	1,980	-	912	-	46	
299	-	787	-	412	-	0	
300	-	214	-	119	-	0	
301	-	1,455	-	885	-	63	
302	-	89	-	489	-	30	
303	-	306	-	150	-	61	
304	-	1,980	-	912	-	46	</

TABLE 9. (Continued)

TABLE 9. (Concluded)

A1N CABLE ARCH AND BEAM SIMULATED CASE 6		337006		1-22-71		RECTANGULAR ROSETTES		FINAL PRINT	
GAGE NUM	SCAN 026	SCAN 028	SCAN 029	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN
837	3,485	6,000	239						
838	1,543	573	-	11					
839	1,971	264	-	120					
840	18	15	-	6					
841	571	640	579						
842	1,102	290	45						
843	837	293	267						
844	2,902	2,768	-	22					
845	1,220	792	193						
846	841	488	57						
847	81	80	-	62					
848	234	135	-	37					
849	1,233	740	-	150					
850	500	303	57						
851	17	14	28						
852	56	20	30						
853	337	199	-	61					
854	197	190	46						
855	1	8	30						
856	73	72	-	18					
857	417	428	-	138					
858	245	150	60						
859	5	2	33						
860	114	123	47						
861	1	1	1						
862	176	123	-	47					
863	145	123	47						
864	70	65	-	45					
865	87	49	30						
866	181	111	-	61					
867	134	180	46						
868	88	84	60						

TABLE 10. TEST DATA, LOAD CASE 7

AIM CABLE ARCH AND BEAM SINGULAR CASE 7 337008 1-22-71						LOAD CELLS IN POUNDS FINAL PRINT					
GAGE NUM	SCAN 044	SCAN 045	SCAN 046	SCAN 047	SCAN 049	SCAN 050	SCAN 051	SCAN 052	SCAN 053		
% LOAD	000	000	000	000	000	000	000	000	000		
001	3	287	613	935	1,238	-	1,367	1,736	1,907	1,986	
002	-	1	73	144	220	316	395	438	479	498	
003	-	1	2	-	1	0	0	0	1	1	
004	0	40	97	153	229	287	319	350	365		
005	1	430	471	714	974	1,216	1,343	1,467	1,527		
006	0	32	64	105	161	-	203	226	248	259	
007	-	0	1	2	-	2	-	2	-	2	
008	0	0	1	1	0	0	0	1	0	0	
009	-	0	30	57	92	121	135	149	156		
010	0	1	1	1	0	1	1	1	1	1	

AIM CABLE ARCH AND BEAM SINGULAR CASE 7 337008 1-22-71						LOAD CELLS IN POUNDS FINAL PRINT					
GAGE NUM	SCAN 054	SCAN 055	SCAN 056	SCAN 057	SCAN 058	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN
% LOAD	110	060	000	000	000						
001	2,749	947	4	-	-						
002	440	253	-	1	-						
003	2	0	-	1	-						
004	329	167	0	-	-						
005	1,346	724	2	-	-						
006	229	124	1	-	-						
007	-	2	-	0	-						
008	0	0	0	0	0						
009	140	77	1	-	-						
010	1	0	-	0	0						

TABLE 10. (Continued)

GAGE NUM	AIM CABLE, ARCH AND BEAM SIMULATIONAL CASE 7 337008 1-22-71			DISPLAYMENT PITS						FINAL PHINI	
	SCAN 044	SCAN 045	SCAN 046	SCAN 047	SCAN 049	SCAN 050	SCAN 051	SCAN 052	SCAN 053		
% LOAD PSI	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.01	0.0002	0.00073	0.0072	0.0073	0.0077	0.0166	0.0195	0.0207	0.0212		
1.02	0.0003	0.00279	0.0620	0.0978	0.1350	0.1729	0.1919	0.2121	0.2213		
1.03	0.000	0.0073	0.0630	0.1004	0.1384	0.1784	0.1993	0.2199	0.2301		
1.04	-	0.0002	0.0076	0.0611	0.0968	0.1340	0.1711	0.1906	0.2104	0.2198	
1.05	0.0002	0.0088	0.0646	0.1025	0.1434	0.1838	0.2048	0.2256	0.2357		
1.06	0.000	0.0057	0.1244	0.1949	0.2726	0.3429	0.3799	0.4171	0.4349		
1.07	0.000	0.0054	0.1229	0.1932	0.2702	0.3417	0.3783	0.4157	0.4337		
1.08	-	0.0002	0.0036	0.0366	0.0912	0.2917	0.3669	0.4058	0.447	0.4635	
1.09	0.0002	0.0039	0.0061	0.0171	0.0309	0.0436	0.0490	0.0547	0.0571		
1.10	0.0000	0.0046	0.0759	0.1187	0.1646	0.2064	0.2286	0.2510	0.2615		
1.11	0.0000	0.0034	0.0788	0.1221	0.1697	0.2121	0.2353	0.2581	0.2688		
1.12	-	0.0004	0.0399	0.0845	0.1310	0.1816	0.2280	0.2524	0.2767	0.2886	
1.13	-	0.0002	0.0051	0.0128	0.0280	0.0487	0.0656	0.0735	0.0814	0.0846	
1.14	-	0.0006	0.0128	-	0.0459	-	0.0841	-	0.1016	0.1062	
1.15	0.0002	-	0.0030	-	0.0286	-	0.0447	-	0.0625	-	0.0718
1.16	-	0.0009	-	0.0085	-	0.0175	-	0.0271	-	0.0368	-
1.17	-	0.0003	-	0.0067	-	0.0187	-	0.0375	-	0.0617	-
1.18	-	0.0006	-	0.0102	-	0.0254	-	0.0446	-	0.0665	-
1.19	0.0002	-	0.0082	-	0.0190	-	0.0326	-	0.0477	-	0.0604
1.20	-	0.0003	-	0.0082	-	0.0177	-	0.0288	-	0.0406	-
1.21	-	0.0003	-	0.0026	0.0096	0.0224	0.0379	0.0521	-	0.0583	-
1.22	0.000	-	0.0018	0.0057	0.0153	0.0270	0.0358	0.0399	0.0449	0.0459	
1.23	0.000	-	0.0090	-	0.0220	-	0.0365	-	0.0683	-	0.0830
1.24	-	0.0002	-	0.0086	-	0.0155	-	0.0326	-	0.0410	-
1.25	0.000	-	0.0023	-	0.0078	-	0.0177	-	0.0292	0.0376	0.0415
1.26	-	0.0002	0.0004	0.0016	0.0016	0.0050	0.0094	0.0117	0.0133	0.0151	0.0153
1.27	-	0.0002	-	0.0015	-	0.0051	-	0.0096	-	0.0164	-
1.28	-	0.0002	-	0.0013	-	0.0016	-	0.0023	-	0.0027	-
1.29	-	0.0002	-	0.0005	0.0005	0.0071	0.0106	0.0131	0.0141	0.0159	0.0161

TABLE 10. (Continued)

AIM CABLE, ARCH AND BEAM SINGULAR CASE 7				337008 1-22-71				DISPLACEMENT POTS				FINAL PRINT			
GAME NUM	SCAN 054	SCAN 055	SCAN 056	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN
101	0.00318	0.00456	0.0075												
102	0.01956	0.01040	0.0017												
103	0.02034	0.01065	0.0003												
104	0.01945	0.01029	0.0014												
105	0.02089	0.01107	0.0007												
106	0.03934	0.02185	0.0075												
107	0.03919	0.02164	0.0053												
108	0.04218	0.02379	0.0048												
109	0.04064	0.02330	0.0027												
110	0.02354	0.01484	0.0000												
111	0.02432	0.01949	0.0021												
112	0.02621	0.01684	0.0049												
113	0.02865	0.01710	0.0248												
114	-	0.00969	-	0.0246	-	0.0015									
115	-	0.00912	-	0.00465	-	0.0037									
116	-	0.00525	-	0.0187	-	0.0111									
117	-	0.01013	-	0.0008	-	0.0240									
118	-	0.01001	-	0.0072	-	0.0038									
119	-	0.00707	-	0.0058	-	0.0018									
120	-	0.00603	-	0.0071	-	0.0044									
121	-	0.00629	-	0.00515	-	0.0134									
122	-	0.00464	-	0.00372	-	0.0098									
123	-	0.00801	-	0.00470	-	0.0044									
124	-	0.00458	-	0.00492	-	0.0055									
125	-	0.00479	-	0.00387	-	0.0104									
126	-	0.01648	-	0.0137	-	0.0025									
127	-	0.00263	-	0.0181	-	0.0034									
128	-	0.00018	-	0.0025	-	0.0039									
129	-	0.00168	-	0.0148	-	0.0028									

TABLE 10. (Continued)

A1M CABLE ARCH AND BEAM STRUCTURAL CASE 7		337008		1-22-71		SINGLE STRAIN GAGES				FINAL PMIN	
GAGE NUM	SCAN 044	SCAN 045	SCAN 046	SCAN 047	SCAN 049	SCAN 050	SCAN 051	SCAN 052	SCAN 053		
% LOAD PSI	000 000	080 080	040 000	060 000	080 000	100 000	110 000	120 000	125 000		
201	42	-	467	-	398	-	1,193	-	1,318	-	1,485
202	21	-	63	-	209	-	460	-	649	-	690
203	21	-	167	-	293	-	398	-	502	-	544
204	42	-	409	-	418	697	816	1,046	1,193	1,297	1,506
205	21	-	167	-	251	-	398	-	649	-	673
206	21	-	188	-	418	628	816	1,088	1,213	1,274	816
207	42	-	351	-	502	-	753	-	1,172	-	1,360
208	42	-	126	-	272	356	439	1,465	1,674	1,799	1,883
209	0	-	409	-	356	-	544	-	586	-	628
210	0	-	188	-	272	502	607	816	944	-	1,029
211	21	-	126	-	293	-	523	-	879	-	983
212	42	-	430	-	356	523	711	879	983	1,067	1,109
213	84	-	405	-	251	-	377	-	481	-	628
214	21	-	251	-	544	795	1,172	1,472	1,569	1,716	1,737
215	21	-	372	-	460	-	670	-	900	-	1,255
216	63	-	84	-	293	-	481	-	607	-	779
217	21	-	42	-	84	-	146	-	272	-	335
218	42	-	63	-	126	-	105	-	84	-	105
219	0	-	63	-	188	-	293	-	356	-	460
220	42	-	21	-	167	-	209	-	314	-	439
221	21	-	167	-	377	-	586	-	774	-	962
222	0	-	251	-	460	690	941	1,172	1,234	1,339	1,402
223	-	84	42	126	293	398	544	607	679	-	753
224	-	42	84	251	398	983	1,130	1,172	1,276	-	1,297
225	-	63	0	0	63	42	0	63	42	-	42
226	0	-	0	-	42	-	209	-	272	-	335
227	21	-	64	-	209	-	168	-	314	-	544
228	-	21	42	126	251	335	439	481	598	-	628
229	-	21	42	21	-	21	-	42	-	42	-
230	0	-	64	21	-	42	-	63	-	105	-
231	-	42	-	21	42	0	42	63	63	105	-
232	-	42	-	42	63	167	230	293	377	377	356

TABLE 10. (Continued)

GAGE NUM		SUAN 054		SUAN 055		SCAN 056		SCAN		SCAN		SCAN		SCAN		SINGLE STRAIN GAGES		FINAL PRINT	
% LOAD	PSI	110 000	060 000	121 000	070 000	121 000	070 000	121 000	070 000										
201	-	1,339	-	970	-	970	-	970	-	970	-	970	-	970	-	970	-	970	-
202	-	649	-	335	-	335	-	335	-	335	-	335	-	335	-	335	-	335	-
203	-	544	-	430	-	430	-	430	-	430	-	430	-	430	-	430	-	430	-
204	-	1,213	-	690	-	690	-	690	-	690	-	690	-	690	-	690	-	690	-
205	-	732	-	377	-	377	-	377	-	377	-	377	-	377	-	377	-	377	-
206	-	1,213	-	928	-	928	-	928	-	928	-	928	-	928	-	928	-	928	-
207	-	1,674	-	900	-	900	-	900	-	900	-	900	-	900	-	900	-	900	-
208	-	565	-	914	-	914	-	914	-	914	-	914	-	914	-	914	-	914	-
209	-	1,025	-	928	-	928	-	928	-	928	-	928	-	928	-	928	-	928	-
310	-	900	-	998	-	998	-	998	-	998	-	998	-	998	-	998	-	998	-
311	-	941	-	1460	-	1460	-	1460	-	1460	-	1460	-	1460	-	1460	-	1460	-
312	-	1,004	-	244	-	244	-	244	-	244	-	244	-	244	-	244	-	244	-
213	-	690	-	314	-	314	-	314	-	314	-	314	-	314	-	314	-	314	-
314	-	1,632	-	941	-	941	-	941	-	941	-	941	-	941	-	941	-	941	-
215	-	1,339	-	774	-	774	-	774	-	774	-	774	-	774	-	774	-	774	-
316	-	816	-	398	-	398	-	398	-	398	-	398	-	398	-	398	-	398	-
217	-	377	-	126	-	126	-	126	-	126	-	126	-	126	-	126	-	126	-
318	-	89	-	63	-	63	-	63	-	63	-	63	-	63	-	63	-	63	-
219	-	502	-	914	-	914	-	914	-	914	-	914	-	914	-	914	-	914	-
320	-	377	-	188	-	188	-	188	-	188	-	188	-	188	-	188	-	188	-
221	-	1,046	-	628	-	628	-	628	-	628	-	628	-	628	-	628	-	628	-
422	-	1,253	-	649	-	649	-	649	-	649	-	649	-	649	-	649	-	649	-
223	-	628	-	335	-	335	-	335	-	335	-	335	-	335	-	335	-	335	-
224	-	1,193	-	900	-	900	-	900	-	900	-	900	-	900	-	900	-	900	-
325	-	42	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
326	-	398	-	472	-	472	-	472	-	472	-	472	-	472	-	472	-	472	-
227	-	523	-	351	-	351	-	351	-	351	-	351	-	351	-	351	-	351	-
228	-	502	-	493	-	493	-	493	-	493	-	493	-	493	-	493	-	493	-
329	-	21	-	21	-	21	-	21	-	21	-	21	-	21	-	21	-	21	-
130	-	84	-	63	-	63	-	63	-	63	-	63	-	63	-	63	-	63	-
331	-	42	-	42	-	42	-	42	-	42	-	42	-	42	-	42	-	42	-
332	-	398	-	188	-	188	-	188	-	188	-	188	-	188	-	188	-	188	-

TABLE 10. (Continued)

CASE NUMBER	AIM CABLE, ARCH AND BEAM STIFFNESSES, CASE 7				RECTANGULAR ROSETTES				FINAL PRINT	
	SCAN 044	SCAN 045	SCAN 046	SCAN 047	SCAN 049	SCAN 050	SCAN 051	SCAN 052	SCAN 053	
% LOAD PSI	000 000	000 000	040 000	060 000	080 000	100 000	110 000	120 000	122 000	
301	34	-	3	-	135	-	279	-	447	-
302	96	-	153	-	396	-	627	-	927	-
303	65	-	75	130	174	240	1,303	-	1,261	-
304	39	9	13	9	12	14	-	7	10	11
305	98	109	224	364	528	582	681	772	791	791
306	27	79	25	93	159	184	193	259	270	270
307	35	16	99	126	171	207	244	297	260	260
308	32	-	90	81	90	86	83	-	77	77
309	63	-	93	-	132	-	240	-	279	-
310	0	-	156	-	337	-	454	-	603	-
311	31	-	31	103	142	-	181	-	252	-
312	45	0	-	2	0	1	252	-	285	-
313	9	110	259	323	414	581	-	3	-	2
314	40	-	47	9	11	43	581	-	649	-
315	25	-	79	134	167	164	269	100	41	107
316	81	-	72	80	69	82	80	275	304	298
317	72	-	9	-	36	102	175	-	250	-
318	22	-	409	-	464	-	679	-	981	-
319	25	-	100	214	289	403	403	1,500	1,361	1,518
320	54	-	22	-	9	9	9	6	7	8
321	13	-	165	274	554	660	870	928	1,103	1,163
322	80	-	54	69	195	270	379	415	458	492
323	33	-	56	103	179	192	246	257	323	335
324	22	-	96	-	88	71	73	70	-	70
325	35	-	107	-	168	295	332	423	-	521
326	35	-	468	-	519	830	1,136	1,420	-	1,739
327	35	-	80	176	267	402	499	532	579	584
328	32	-	6	-	5	0	2	3	-	2
329	40	-	172	-	441	629	838	1,041	1,173	1,289
330	23	-	9	78	152	214	254	302	326	366
331	23	-	47	145	208	292	370	474	494	484
332	94	-	90	79	75	76	75	70	-	75
333	91	-	123	705	1,144	1,562	1,991	2,129	2,393	2,500
334	93	20	44	105	155	195	194	199	1,097	1,141
335	46	151	331	519	704	898	992	-	217	217
336	30	-	96	-	89	90	87	88	88	89
337	27	-	46	-	76	121	188	200	305	273
338	4	-	204	-	486	691	967	1,206	1,382	1,515
339	11	-	79	205	285	-	389	1,503	539	586
340	22	0	-	2	-	3	4	-	3	5
341	9	90	877	1,259	1,751	2,119	2,435	-	2,691	-
342	40	99	185	178	216	223	313	-	326	306
343	25	165	346	541	768	948	1,061	1,141	1,192	-
344	63	99	-	90	86	97	85	87	86	86
345	0	-	466	84	153	200	175	237	212	323
346	31	110	213	315	383	987	1,230	1,355	1,474	1,613
347	0	-	1	1	1	394	528	559	531	645
348	45	-	1	-	1	-	1	-	1	0

TABLE 10. (Continued)

AIM CABLE AND BEAM SIEGELURAL CAST 7		337008 1-22-71		RECTANGULAR ROSETTES		FINAL PRINT	
GAGE NUM	SCAN 054	SCAN 055	SCAN 056	SCAN	SCAN	SCAN	SCAN
% LOAD	110	090	080	000	000	000	000
PSI	000	000	000	000	000	000	000
401	-	665	-	487	49		
402	-	1,302	-	706	18		
403	-	319	-	159	33		
404	-	8	-	16	67		
405	-	188	-	337	146		
406	-	249	-	132	10		
407	-	81	-	88	27		
408	-	317	-	278	9		
409	-	838	-	678	40		
410	-	261	-	150	25		
411	-	5	-	2	25		
412	-	561	-	426	36		
413	-	32	-	14	49		
414	-	264	-	170	18		
415	-	72	-	73	33		
416	-	259	-	60	72		
417	-	1,365	-	959	22		
418	-	1,553	-	900	25		
419	-	7	-	12	36		
420	-	1,036	-	251	7		
421	-	433	-	461	87		
422	-	301	-	145	40		
423	-	70	-	70	39		
424	-	514	-	470	96		
425	-	1,578	-	623	34		
426	-	1,532	-	676	65		
427	-	4	-	2	38		
428	-	1,168	-	638	78		
429	-	394	-	499	47		
430	-	387	-	169	16		
431	-	77	-	79	90		
432	-	2,241	-	1,410	63		
433	-	1,024	-	102	0		
434	-	1,024	-	954	31		
435	-	89	-	87	0		
436	-	241	-	192	16		
437	-	1,352	-	776	78		
438	-	552	-	492	47		
439	-	0	-	2	0		
440	-	2,460	-	1,364	53		
441	-	319	-	466	9		
442	-	1,070	-	299	22		
443	-	86	-	85	67		
444	-	268	-	129	22		
445	-	1,450	-	776	72		
446	-	591	-	423	25		
447	-	2	-	2	9		

TABLE 10. (Continued)

GAPE NUM	ALM CABLE, ANCH AND BEAM SILENTURAL CASE 7 3370008 1*22*71						RECTANGULAR ROSETTES			FINAL PRINT	
	SCAN 044	SCAN 045	SCAN 046	SCAN 047	SCAN 048	SCAN 050	SCAN 051	SCAN 052	SCAN 053		
% LOAD	000	000	000	000	000	000	000	000	000	000	000
PSI	000	000	000	000	000	000	000	000	000	000	000
837	72	245	537	869	1,179	1,502	1,649	1,779	1,836		
838	22	67	244	369	445	559	661	697	693		
839	25	69	146	260	367	472	494	531	571		
-	54	22	18	38	22	18	19	20	19		
840	102	105	102	178	417	485	520	484	529		
841	9	74	165	272	323	423	489	515	529		
842	56	90	133	225	370	454	504	500	529		
-	22	26	22	27	30	28	30	28	30		
843	46	110	288	536	752	923	966	1,121	1,195		
844	141	47	56	120	153	170	220	284	304		
845	47	79	116	208	300	376	373	419	445		
-	45	90	76	75	75	77	76	76	74		
846	35	27	7	8	7	2	6	15	12		
847	35	4	87	133	212	252	337	358	331		
848	35	11	40	70	103	127	165	186	159		
-	59	67	6	13	16	15	13	14	10		
849	40	16	44	22	13	15	15	17	38		
850	9	78	44	72	174	235	251	277	243		
851	25	47	44	25	80	110	94	105	103		
-	54	45	22	9	6	0	0	0	2		
852	143	96	162	172	190	383	348	385	389		
853	18	34	37	15	28	23	58	83	49		
854	80	65	99	79	81	180	145	151	170		
-	39	52	54	63	60	57	56	59	62		
855	47	4	56	30	13	79	96	74	43		
856	15	66	24	61	107	79	127	103	137		
857	16	35	40	46	60	79	112	90	90		
-	90	77	51	60	78	72	165	71	71		
858	9	56	96	99	18	74	43	134	141		
859	40	24	34	90	107	137	137	134	141		
860	25	40	65	75	44	106	90	134	141		
-	9	51	52	54	67	58	64	59	58		

TABLE 10. (Concluded)

ALM CABLE ARCH AND BEAM STUCTURAL CASE 7		337008 1-22-71		RECTANGULAR ROSETTES		FINAL PRINT	
GAME NUM	SCAN 054	SCAN 055	SCAN 056	SCAN	SCAN	SCAN	SCAN
X LOAD PSI	110 000	060 000	000 000				
337	1,703	989	9				
338	671	448	-	40			
339	516	271	-	25			
	19	18	-				
340	599	205	-	36			
341	474	424	-	423			
342	537	364	-	45			
	29	29	-	189			
343	1,084	266	-	22			
344	259	164	-	38			
345	413	211	-	118			
	75	77	-	40			
346	27	16	-	51			
347	316	143	-	24			
348	145	80	-	56			
	11	6	-	40			
349	67	35	-	39			
350	277	184	-	9			
351	105	75	-	53			
	6	9	-	22			
352	362	271	-	81			
353	44	42	-	19			
354	159	115	-	50			
	61	53	-	54			
355	39	16	-	9			
356	102	78	-	40			
357	70	47	-	25			
	77	90	-	81			
358	134	52	-	15			
359	134	83	-	47			
360	134	68	-	16			
	95	63	-	0			

TABLE 11. TEST DATA, LOAD CASE 8.

AIM CABLE, ARCH AND BEAM SIMULATIONAL CASE 8		337007 1=22=71		LOAD CELLS IN POUNDS		FINAL PRINT			
GAPE NUM	SCAN 030	SCAN 031	SCAN 032	SCAN 033	SCAN 035	SCAN 036	SCAN 037	SCAN 038	SCAN 039
% LOAD PSI	000 000	040 000	060 000	080 000	100 000	110 000	120 000	122 000	122 000
001	-	1	362	748	1,114	1,484	1,873	2,062	2,257
002	-	0	0	1	0	0	0	1	0
003	-	1	5	2	2	1	1	2	2
004	-	22	121	188	279	350	382	419	436
005	1	476	561	847	1,178	1,475	1,618	1,764	1,832
006	0	0	0	0	0	0	1	1	1
007	-	0	2	2	2	1	1	2	2
008	0	0	0	0	0	0	1	0	0
009	-	0	0	0	0	0	0	0	0
010	-	0	1	0	0	0	0	0	0

AIM CABLE, ARCH AND BEAM SIMULATIONAL CASE 8		337007 1=22=71		LOAD CELLS IN POUNDS		FINAL PRINT	
GAPE NUM	SCAN 041	SCAN 042	SCAN 043	SCAN	SCAN	SCAN	SCAN
% LOAD PSI	110 000	080 000	000 000				
001	2,113	8,177	4				
002	0	0	1				
003	3	1	-	2			
004	391	418	2				
005	1,643	690	5				
006	-	0	-	0			
007	-	2	0	3			
008	0	1	0	0			
009	0	0	0	0			
010	-	1	-	1			

TABLE 11. (Continued)

GATE NUM	AIM CABLE ARCH AND BEAM STIFFNESS			CASE 6 337007 1-22-71			DISPLACEMENT POTS			FINAL PRINT		
	SCAN 030	SCAN 031	SCAN 032	SCAN 033	SCAN 035	SCAN 036	SCAN 037	SCAN 038	SCAN 039	SCAN 040	SCAN 041	
% LOAD	000	040	060	080	100	110	120	130	140	150	160	
PSI	000	000	000	000	000	000	000	000	000	000	000	
101	-	0.00002	0.00019	0.00012	-	0.0039	-	0.0065	-	0.0084	-	
102	-	0.00000	0.00046	0.00071	0.1194	0.1648	0.2093	0.2311	0.2561	0.2679	-	
103	-	0.00000	0.00054	0.00098	0.1242	0.1726	0.2185	0.2408	0.2666	0.2788	-	
104	-	0.00004	0.00033	0.00054	0.1163	0.1609	0.2041	0.2253	0.2497	0.2614	-	
105	-	0.00000	0.00055	0.00096	0.1247	0.1729	0.2198	0.2428	0.2691	0.2817	-	
106	-	0.00003	0.00050	0.00099	0.1609	0.2451	0.3420	0.4281	0.4682	0.5213	0.5469	
107	-	0.00003	0.00021	0.00045	0.2362	0.3297	0.4129	0.4510	0.5033	0.5284	-	
108	-	0.00000	0.00096	0.00163	0.2518	0.3493	0.4355	0.4731	0.5135	0.5323	-	
109	-	0.00005	0.00009	0.00009	0.00007	0.00009	0.00000	0.00002	0.00000	0.00000	0.0000	
110	-	0.00000	0.00073	0.00095	0.1545	0.2144	0.2846	0.3214	0.3568	0.3816	0.4268	
111	-	0.00004	0.00067	0.00077	0.1479	0.2056	0.2566	0.2800	0.3116	0.3439	0.3968	
112	-	0.00000	0.00080	0.00095	0.1511	0.2099	0.2628	0.2861	0.3190	0.3539	0.3968	
113	-	0.00000	0.00000	0.00007	0.00009	0.0030	0.0063	0.0102	0.0100	0.0100	0.0109	
114	-	0.00012	0.00099	0.0268	0.0420	0.0901	0.1764	0.2649	0.3235	0.3969	-	
115	-	0.00000	0.00119	0.0317	0.0514	0.0735	0.0936	0.1031	0.1136	0.1187	-	
116	-	0.00009	0.00082	0.0254	0.0411	0.0595	0.0753	0.0829	0.0919	0.0966	-	
117	-	0.00003	0.00012	0.00000	0.00006	0.0006	0.0009	0.0029	0.0035	0.0038	-	
118	-	0.00000	0.00096	0.0266	0.0423	0.0601	0.0764	0.0840	0.0931	0.0976	-	
119	-	0.00000	0.00080	0.0232	0.0376	0.0540	0.0691	0.0753	0.0844	0.0881	-	
120	-	0.00000	0.00089	0.0268	0.0427	0.0612	0.0771	0.0839	0.0946	0.0995	-	
121	-	0.00009	0.00003	0.0006	0.0003	0.0006	0.0009	0.0023	0.0038	0.0041	-	
122	-	0.00002	0.00002	0.0002	0.0004	0.0000	0.0002	0.0011	0.0016	0.0014	-	
123	-	0.00000	0.00087	0.0215	0.0330	0.0463	0.0587	0.0645	0.0711	0.0741	-	
124	-	0.00004	0.00076	0.0222	0.0352	0.0500	0.0627	0.0685	0.0768	0.0803	-	
125	-	0.00000	0.0002	0.0004	0.0007	0.0004	0.0005	0.0009	0.0012	0.0011	-	
126	-	0.00004	0.00002	0.0002	0.0004	0.0014	0.0020	0.0023	0.0025	0.0027	-	
127	-	0.00002	0.00015	0.0043	0.0058	0.0070	0.0085	0.0096	0.0102	0.0102	-	
128	-	0.00000	0.0007	0.0043	0.0070	0.0098	0.0125	0.0134	0.0161	0.0168	-	
129	-	0.00002	0.0011	0.0014	0.0023	0.0002	0.0004	0.0007	0.0007	0.0007	-	

TABLE 11. (Continued)

A1M CABLE ARCH AND BEAM SIMULATIONS CASE # 337007 1-22-71						DISPLACEMENT POTS			FINAL PRINT	
GATE NUM	SCAN 041	SCAN 042	SCAN 043	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN
% LOAD	110	000	000	000	000	000	000	000	000	000
PSI	000	000	000	000	000	000	000	000	000	000
101	-	0.0130	-	0.0128	-	0.0027	-	-	-	-
102	-	0.02412	-	0.0127	-	0.0041	-	-	-	-
103	-	0.02533	-	0.01217	-	0.0052	-	-	-	-
104	-	0.02369	-	0.01402	-	0.0041	-	-	-	-
105	-	0.02553	-	0.01221	-	0.0046	-	-	-	-
106	-	0.02186	-	0.03481	-	0.0366	-	-	-	-
107	-	0.03011	-	0.03457	-	0.0347	-	-	-	-
108	-	0.02051	-	0.03138	-	0.0123	-	-	-	-
109	-	0.020137	-	0.0143	-	0.0096	-	-	-	-
110	-	0.03177	-	0.0194	-	0.0193	-	-	-	-
111	-	0.03096	-	0.01930	-	0.0194	-	-	-	-
112	-	0.03164	-	0.01978	-	0.0197	-	-	-	-
113	-	0.020142	-	0.01428	-	0.0076	-	-	-	-
114	-	0.02089	-	0.01499	-	0.0029	-	-	-	-
115	-	0.021092	-	0.0107	-	0.0021	-	-	-	-
116	-	0.020867	-	0.01432	-	0.0050	-	-	-	-
117	-	0.020041	-	0.0115	-	0.0035	-	-	-	-
118	-	0.020910	-	0.0166	-	0.0015	-	-	-	-
119	-	0.020820	-	0.0203	-	0.0002	-	-	-	-
120	-	0.020915	-	0.0250	-	0.0006	-	-	-	-
121	-	0.020052	-	0.0044	-	0.0032	-	-	-	-
122	-	0.020023	-	0.0021	-	0.0025	-	-	-	-
123	-	0.020716	-	0.0054	-	0.0012	-	-	-	-
124	-	0.020749	-	0.0451	-	0.0002	-	-	-	-
125	-	0.020019	-	0.0014	-	0.0016	-	-	-	-
126	-	0.020029	-	0.0044	-	0.0005	-	-	-	-
127	-	0.020113	-	0.0102	-	0.0017	-	-	-	-
128	-	0.020161	-	0.0115	-	0.0007	-	-	-	-
129	-	0.020005	-	0.0011	-	0.0005	-	-	-	-

TABLE 11. (Continued)

DATE NUM	ALM CABLE, ARCH AND BEAM STIMULUS			CASE 8 337007 1-22-71			SINGLE STRAIN GAGES			FINAL PRINT		
	SCAN 030	SCAN 031	SCAN 032	SCAN 033	SCAN 035	SCAN 036	SCAN 037	SCAN 038	SCAN 039	SCAN 040	SCAN 041	
% LOAD	000	080	040	060	080	100	110	120	125	130	135	
PSI	000	080	000	000	000	000	000	000	000	000	000	
301	-21	-230	-481	-711	-983	-1,213	-1,360	-1,485	-1,569	-1,634	-1,734	
302	-21	-126	-356	-564	-795	-941	-1,088	-1,130	-1,180	-1,229	-1,286	
303	-21	-168	-356	-481	-711	-837	-921	-1,029	-1,029	-1,029	-1,086	
304	-42	-188	-377	-628	-837	-1,067	-1,151	-1,297	-1,339	-1,339	-1,339	
305	-21	-109	-439	-669	-879	-1,025	-1,172	-1,276	-1,316	-1,316	-1,316	
306	-64	-409	-502	-607	-962	-1,193	-1,318	-1,423	-1,506	-1,506	-1,506	
307	-42	-209	-502	-732	-1,004	-1,318	-1,465	-1,611	-1,653	-1,653	-1,653	
308	-21	-209	-660	-649	-879	-1,172	-1,243	-1,381	-1,423	-1,423	-1,423	
309	-21	-188	-314	-460	-628	-795	-837	-983	-983	-983	-983	
310	-21	-188	-439	-649	-879	-1,067	-1,172	-1,318	-1,402	-1,402	-1,402	
311	-21	-350	-502	-732	-983	-1,234	-1,381	-1,465	-1,569	-1,569	-1,569	
312	-21	-446	-356	-523	-732	-879	-983	-1,029	-1,109	-1,109	-1,109	
313	-21	-130	-481	-761	-1,025	-1,276	-1,423	-1,521	-1,632	-1,632	-1,632	
314	-21	-172	-660	-670	-879	-1,130	-1,213	-1,339	-1,402	-1,402	-1,402	
315	-21	-467	-416	-586	-795	-962	-1,067	-1,193	-1,255	-1,255	-1,255	
316	-21	-230	-439	-741	-900	-1,172	-1,276	-1,402	-1,495	-1,495	-1,495	
317	0	-21	-63	-63	-146	-188	-230	-1,67	-2,09	-2,09	-2,09	
318	0	-105	-186	-272	-335	-377	-377	-439	-418	-418	-418	
319	42	-126	-251	-314	-439	-565	-628	-649	-670	-670	-670	
320	-21	-146	-167	-272	-356	-439	-439	-398	-377	-377	-377	
321	-21	-493	-481	-753	-983	-1,234	-1,339	-1,485	-1,685	-1,685	-1,685	
322	0	-230	-502	-753	-1,025	-1,255	-1,339	-1,402	-1,506	-1,506	-1,506	
323	21	-346	-314	-481	-628	-816	-941	-962	-1,029	-1,029	-1,029	
324	-64	-105	-272	-356	-523	-649	-774	-858	-941	-941	-941	
325	-63	-21	-442	-63	-168	-209	-230	-230	-219	-219	-219	
326	0	-84	-126	-209	-209	-293	-293	-335	-356	-356	-356	
327	-21	-42	-105	-105	-105	-188	-188	-209	-230	-230	-230	
328	-21	-21	-42	-126	-209	-272	-272	-293	-293	-293	-293	
329	0	-21	-21	-42	-105	-105	-146	-109	-126	-126	-126	
330	-42	0	-21	0	-21	-21	-42	-42	0	0	0	
331	-21	-21	-42	-42	-42	-42	-42	-63	-63	-63	-63	
332	-42	-21	-63	-63	-105	-126	-126	-126	-126	-126	-126	

TABLE 11. (Continued)

ALM CABLE, ARCH AND BEAM STRUCTURAL CASE 8		3337007 1-22-71		SINGLE STRAIN GAGES				FINAL PRINT	
GAGE NUM	SCAN 041	SCAN 042	SCAN 043	SCAN	SCAN	SCAN	SCAN	SCAN	SCAN
% LOAD	110 PSI	060 PSI	060 PSI	060 PSI	060 PSI	060 PSI	060 PSI	060 PSI	060 PSI
301	-	1.381	-	753	0				
302	-	1.088	-	265	0				
303	-	1.983	-	286	-	63			
304	-	1.193	-	28	-	42			
305	-	1.193	-	32	-	63			
306	-	1.297	-	32	-	21			
307	-	1.506	-	616	-	42			
308	-	1.255	-	32	0				
309	-	1.921	-	523	-	42			
310	-	1.234	-	90	-	21			
311	-	1.381	-	616	-	42			
312	-	1.004	-	07	84				
313	-	1.381	-	795	0				
314	-	1.276	-	711	-	42			
315	-	1.172	-	690	-	21			
316	-	1.318	-	711	0				
317	-	1.126	-	63	-	42			
318	-	314	-	67	-	63			
319	-	586	-	193	-	42			
320	-	335	-	67	-	63			
321	-	1.381	-	616	-	42			
322	-	1.423	-	616	0				
323	-	941	-	544	-	42			
324	-	858	-	181	-	21			
325	-	209	-	167	0				
326	-	272	-	84	-	21			
327	-	167	-	0	-	21			
328	-	272	-	251	-	63			
329	-	105	-	42	0				
330	U	-	-	84	-	21			
331	-	63	-	21	-	21			
332	-	126	-	105	-	21			

TABLE 11. (Continued)

ATM CABLE, ARCH AND BEAM SIGNATUREL CASE 8 337007 1-22-71										RECTANGULAR ROSETTES					FINAL PRINT		
DATE NUM	SCAN 030	SPAN 031	SCAN 032	SPAN 033	SCAN 034	SCAN 035	SCAN 036	SCAN 037	SCAN 038	SCAN 039	SCAN 040	SCAN 041	SCAN 042	SCAN 043	SCAN 044	SCAN 045	SCAN 046
% LOAD	000	000	040	060	080	100	110	120	130	140	150	160	170	180	190	200	210
PSI	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000
101	-	31	-	49	-	30	-	190	-	224	-	316	-	339	-	384	-
102	-	31	-	41	-	345	-	556	-	669	-	1,089	-	1,222	-	1,302	-
103	0	-	40	60	-	157	-	226	-	323	-	386	-	442	-	459	-
104	42	-	6	0	-	0	-	1	-	1	-	2	-	2	-	3	-
105	-	35	-	151	-	252	-	381	-	619	-	704	-	653	-	791	-
106	-	35	-	69	-	127	-	195	-	291	-	37	-	34	-	84	-
107	-	32	-	67	-	75	-	78	-	71	-	76	-	78	-	80	-
108	-	96	-	161	-	221	-	370	-	497	-	654	-	603	-	761	-
109	-	96	-	155	-	466	-	629	-	939	-	1,157	-	1,208	-	1,362	-
110	-	40	-	123	-	130	-	221	-	221	-	252	-	303	-	304	-
111	-	49	-	155	-	20	-	7	-	0	-	4	-	3	-	1	-
112	-	18	-	124	-	313	-	495	-	542	-	671	-	766	-	871	-
113	-	33	-	46	-	94	-	139	-	199	-	234	-	269	-	294	-
114	-	22	-	15	-	90	-	92	-	91	-	80	-	89	-	92	-
115	-	44	-	118	-	153	-	237	-	311	-	286	-	370	-	390	-
116	-	66	-	569	-	909	-	1,294	-	1,625	-	1,713	-	1,847	-	1,952	-
117	-	35	-	225	-	376	-	526	-	657	-	713	-	738	-	781	-
118	-	42	-	6	-	6	-	6	-	203	-	231	-	284	-	299	-
119	-	43	-	64	-	66	-	69	-	68	-	67	-	65	-	67	-
120	-	44	-	215	-	255	-	322	-	438	-	584	-	641	-	747	-
121	-	27	-	233	-	651	-	927	-	1,342	-	1,727	-	1,898	-	2,092	-
122	-	14	-	160	-	198	-	303	-	452	-	972	-	624	-	674	-
123	-	67	-	6	-	3	-	4	-	4	-	3	-	7	-	6	-
124	-	45	-	435	-	477	-	713	-	992	-	1,265	-	1,335	-	1,446	-
125	-	72	-	956	-	1,134	-	1,986	-	2,458	-	2,675	-	2,892	-	3,013	-
126	-	22	-	106	-	96	-	106	-	106	-	107	-	103	-	110	-
127	-	25	-	425	-	669	-	940	-	1,194	-	1,285	-	1,400	-	1,451	-
128	-	84	-	88	-	89	-	90	-	97	-	98	-	87	-	88	-
129	-	73	-	31	-	110	-	168	-	201	-	201	-	285	-	265	-
130	-	22	-	465	-	500	-	795	-	1,112	-	1,361	-	1,526	-	1,672	-
131	-	54	-	9	-	7	-	343	-	472	-	980	-	621	-	704	-
132	-	78	-	217	-	976	-	1,473	-	2,045	-	2,567	-	2,807	-	3,151	-
133	-	16	-	117	-	245	-	245	-	328	-	369	-	409	-	409	-
134	-	45	-	425	-	614	-	859	-	1,099	-	1,199	-	1,315	-	1,371	-
135	-	25	-	306	-	603	-	901	-	1,201	-	1,521	-	1,687	-	1,929	-
136	-	57	-	165	-	275	-	386	-	530	-	647	-	735	-	781	-
137	-	17	-	1	-	1	-	2	-	3	-	2	-	3	-	2	-

TABLE 11. (Continued)

LOAD PSI	ALM CABLE: ANCH AND BEAM STIMULUS CASE 8 33/1007 1922-71			RECTANGULAR ROSETTES FINAL PHINI		
	DATA NUM	SCAN 041	SCAN 042	SCAN 043	SCAN	SCAN
	110 000	000 000	000 000	SCAN	SCAN	SCAN
.001	-	410	-	216	58	
.002	-	2,245	-	958	36	
.003	-	418	-	421	11	
.004	-	2	-	2	67	
.005	-	18	-	5	49	
.006	-	341	-	414	33	
.007	-	77	-	72	67	
.008	-	731	-	940	34	
.009	-	1,267	-	1,15	-	
.010	-	268	-	138	65	
.011	-	2	-	5	92	
.012	-	275	-	135	71	
.013	-	296	-	115	40	
.014	-	1,713	-	1,64	56	
.015	-	683	-	978	25	
.016	-	7	-	8	81	
.017	-	3,312	-	938	80	
.018	-	500	-	390	13	
.019	-	406	-	229	33	
.020	-	63	-	60	23	
.021	-	651	-	425	4	
.022	-	910	-	935	27	
.023	-	630	-	415	11	
.024	-	6	-	6	67	
.025	-	1,272	-	741	9	
.026	-	446	-	352	53	
.027	-	413	-	394	22	
.028	-	75	-	74	-	
.029	-	1,569	-	976	21	
.030	-	648	-	992	68	
.031	-	1,346	-	915	35	
.032	-	87	-	88	77	
.033	-	273	-	92	115	
.034	-	2,783	-	8,972	98	
.035	-	90	-	46	27	
.036	-	5	-	5	-	
.037	-	2,937	-	6,994	87	
.038	-	405	-	374	7	
.039	-	4,266	-	210	40	
.040	-	66	-	85	84	
.041	-	266	-	97	76	
.042	-	1,64	-	2,090	44	
.043	-	749	-	497	60	
.044	-	2	-	5	42	

TABLE 11. (Continued)

AIM CABLE, ARCH AND BEAM STRUCTURAL CASE 8 337007 1-22-71		RECTANGULAR ROSETTES FINAL PRINT								
GAGE NUM		SCAN 030	SCAN 031	SCAN 032	SCAN 033	SCAN 035	SCAN 036	SCAN 037	SCAN 038	SCAN 039
% LOAD	PSI	000	000	040	060	080	100	110	120	125
837	66	453	656	963	1,389	1,678	1,797	2,019	2,064	
838	4	91	187	317	454	632	639	729	684	
839	35	81	235	323	467	523	579	649	690	
840	58	15	25	84	23	22	21	22	23	
841	24	7	99	52	58	43	48	102	170	
842	56	-	87	213	354	-	542	-	633	-
842	40	40	57	151	246	293	313	368	404	
843	51	-	39	17	31	25	27	26	24	26
843	28	427	504	700	999	1,338	1,419	1,605	1,604	
844	-	121	183	206	312	442	454	489	519	
845	125	160	247	344	448	498	483	557	542	
846	54	-	86	84	95	82	79	80	81	
847	78	-	15	55	65	17	36	108	81	50
847	16	-	110	257	341	420	495	642	637	606
848	47	-	47	101	138	201	229	267	278	278
849	-	45	0	19	35	19	15	22	14	14
850	-	2	1	22	22	24	40	31	44	49
851	127	-	93	72	22	56	71	31	76	111
852	65	-	46	25	22	40	56	31	60	80
853	36	30	36	22	51	41	45	35	39	
854	27	47	66	40	81	138	110	137	146	
855	4	15	4	9	19	16	15	14	10	
855	11	16	35	25	50	60	47	90	66	
856	67	0	13	9	9	12	0	8	18	
856	49	56	4	16	13	22	22	53	22	
857	18	-	24	27	47	80	72	403	72	
857	33	40	11	36	33	25	25	23	25	
858	22	0	23	45	67	91	81	81	54	
859	134	24	121	96	105	164	167	171	150	
860	22	-	36	28	36	74	91	104	110	
860	56	40	75	67	90	138	135	124	134	
861	41	-	84	54	67	64	60	63	62	65

TABLE 11. (Concluded)

ALM CABLE-ARCH AND BEAM STINGULAR CASE 8		337007 1-22-71		RECTANGULAR ROSETTES		FINAL PRINT	
GAGE NUM	SCAN 041	SCAN 042	SCAN 043	SCAN	SCAN	SCAN	SCAN
% LOAD	110	060	000				
PSI	000	060	000				
.337	1,986	8,244	102				
.338	762	442	9				
.339	612	401	56				
.340	23	24	41				
.341	214	444	234				
.342	588	398	47				
.343	-	401	491				
.344	-	24	26				
.345	1,471	974	87				
.346	-	-	-				
.347	496	337	56				
.348	486	319	71				
.349	-	81	80				
.350	-	29	22				
.351	596	384	53				
.352	284	181	22				
.353	17	17	22				
.354	66	18	32				
.355	131	138	124				
.356	99	60	46				
.357	36	33	30				
.358	127	110	72				
.359	-	-	-				
.360	145	101	40				
	70	64	51				

TABLE 12. TEST DATA, CABLE-ARCH LOAD DEFLECTION TESTS, HORIZONTAL LOAD

Load, lbs	Dial Indicator Reading			Net Deflection, in. ^a		
	1	2	3	1	2	3
0	538	522	533	+0.074	+0.074	+0.001
+5	464	448	532	+0.123	+0.124	+0.001
+10	415	398	532	+0.165	+0.165	+0.001
+15	373	357	532	+0.286	+0.288	+0.003
+20	252	234	529	+0.280	+0.283	+0.003
+15	258	239	529	+0.183	+0.182	+0.001
+10	355	340	532	+0.148	+0.149	+0.001
+5	390	373	532	+0.069	+0.071	+0.001
+0	469	451	532	-0.013	-0.016	0.000
-5	551	538	533	-0.059	-0.061	-0.001
-10	597	583	534	-0.125	-0.127	-0.002
-15	663	649	535	-0.192	-0.196	-0.006
-20	730	718	539	-0.189	-0.193	-0.006
-15	727	715	539	-0.132	-0.137	-0.003
-10	670	659	536	-0.065	-0.070	-0.001
-5	603	592	534	-0.026	-0.030	+0.001
0	564	552	532			

a. Referenced to initial zero

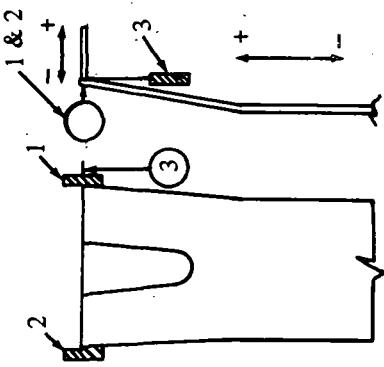
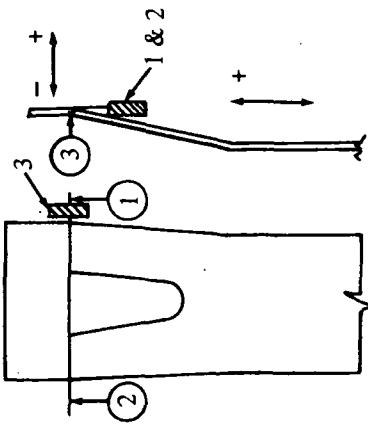


TABLE 13. TEST DATA, CABLE-ARCH LOAD DEFLECTION TESTS, VERTICAL LOAD

Load, lbs	Dial Indicator Reading			Net Deflection, in. ^a		
	1	2	3	1	2	3
0	505	577	806	-	-	-
-25	578	650	806	-0.073	-0.073	0.000
-50	702	773	803	-0.197	-0.196	+0.003
-75	837	910	800	-0.332	-0.333	+0.006
-50	777	849	799	-0.272	-0.272	+0.007
-25	652	724	805	-0.147	-0.147	+0.001
0	524	595	806	-0.019	-0.018	0.000
+25	406	475	815	+0.099	+0.102	-0.009
+50	284	355	816	+0.221	+0.222	-0.010
+75	185	259	817	+0.320	+0.318	-0.011
+50	228	301	817	+0.277	+0.276	-0.011
+25	340	415	813	+0.165	+0.162	+0.007
0	469	542	809	+0.036	+0.035	-0.003
-25	572	645	807	-0.067	-0.068	-0.001
0	506	579	806	-0.001	-0.002	0.000

a. Referenced to initial zero



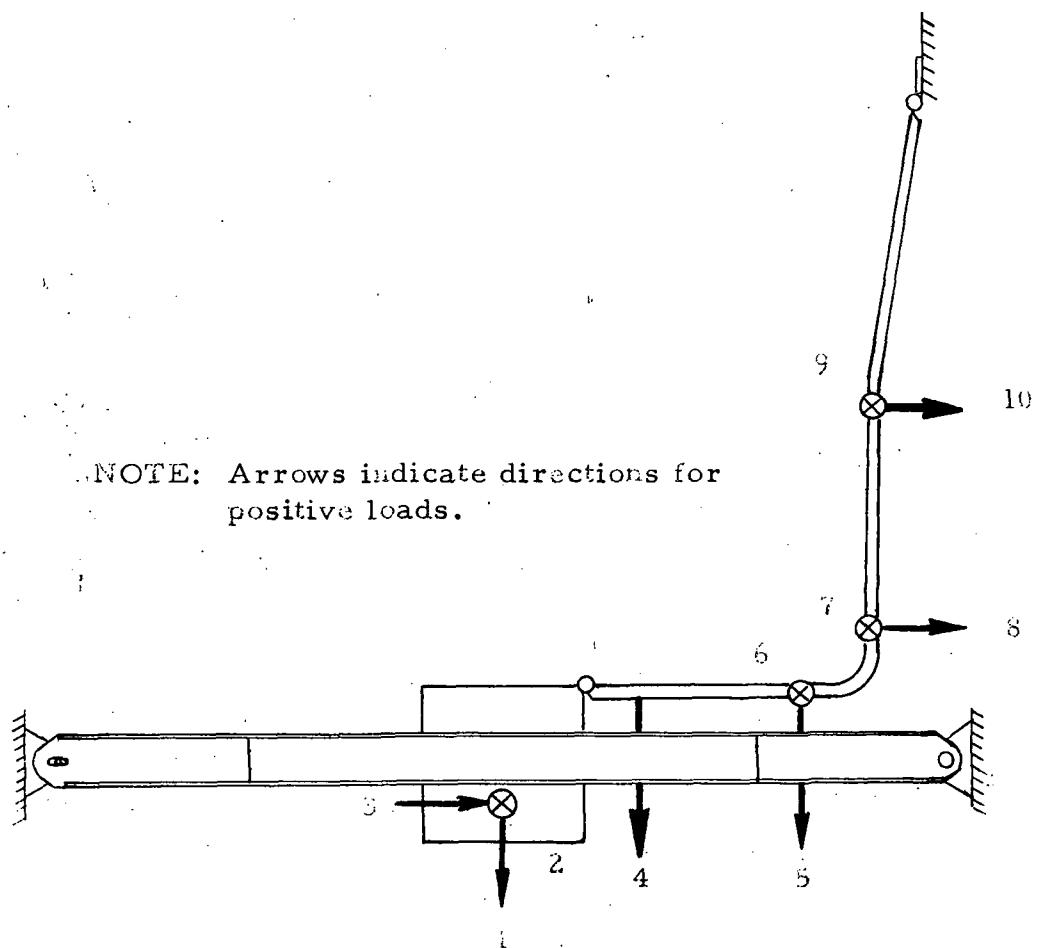
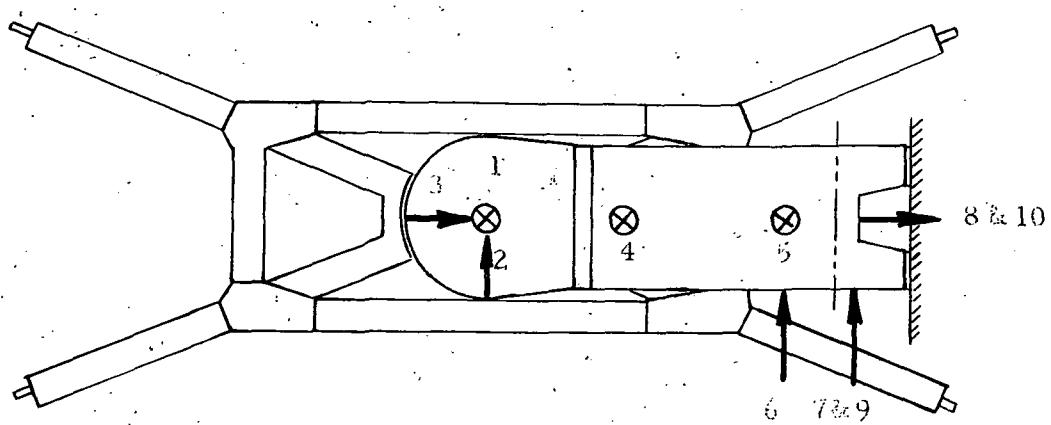


Figure 1. Hydraulic cylinder and load cell locations.

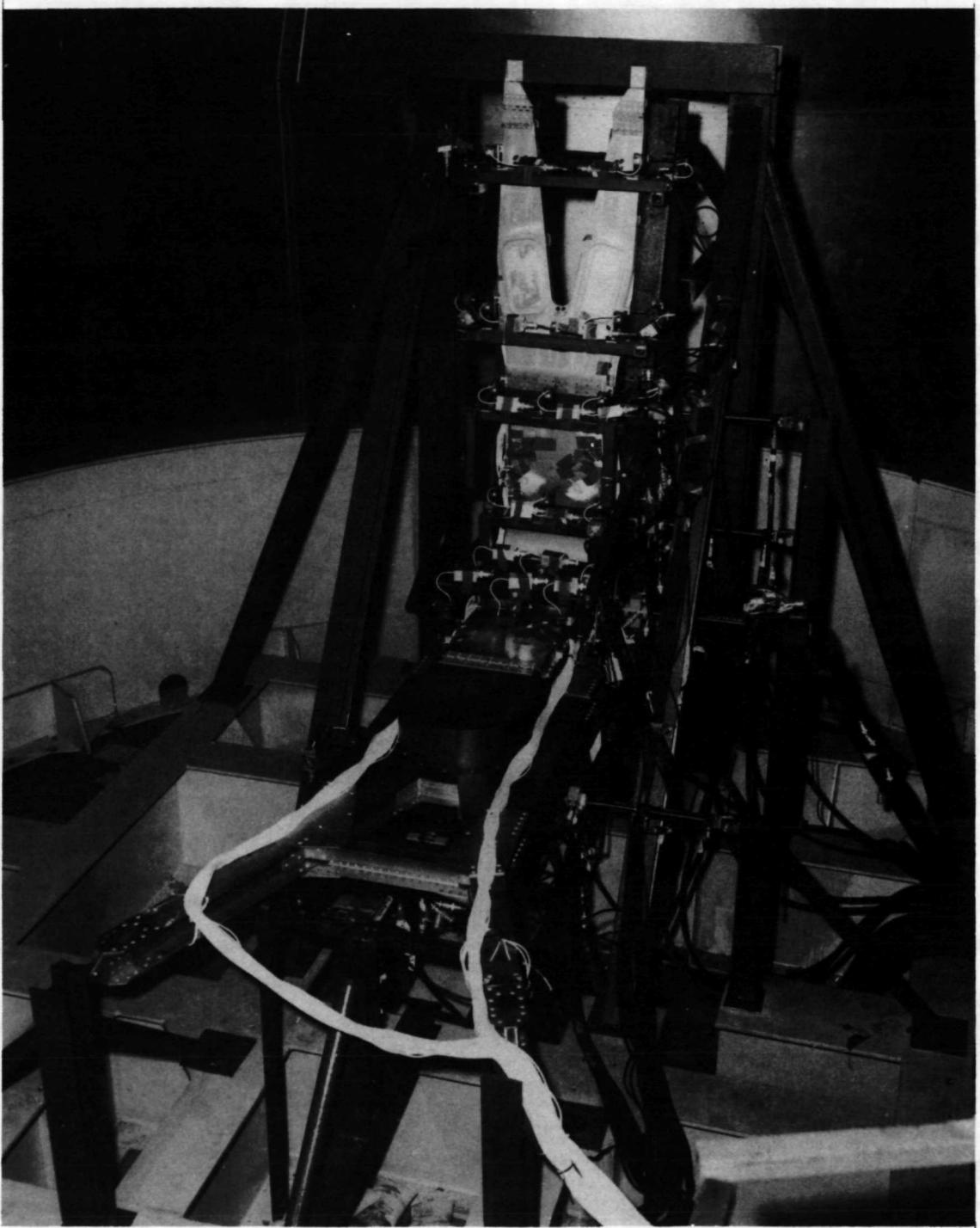


Figure 2. Test setup, overall view.

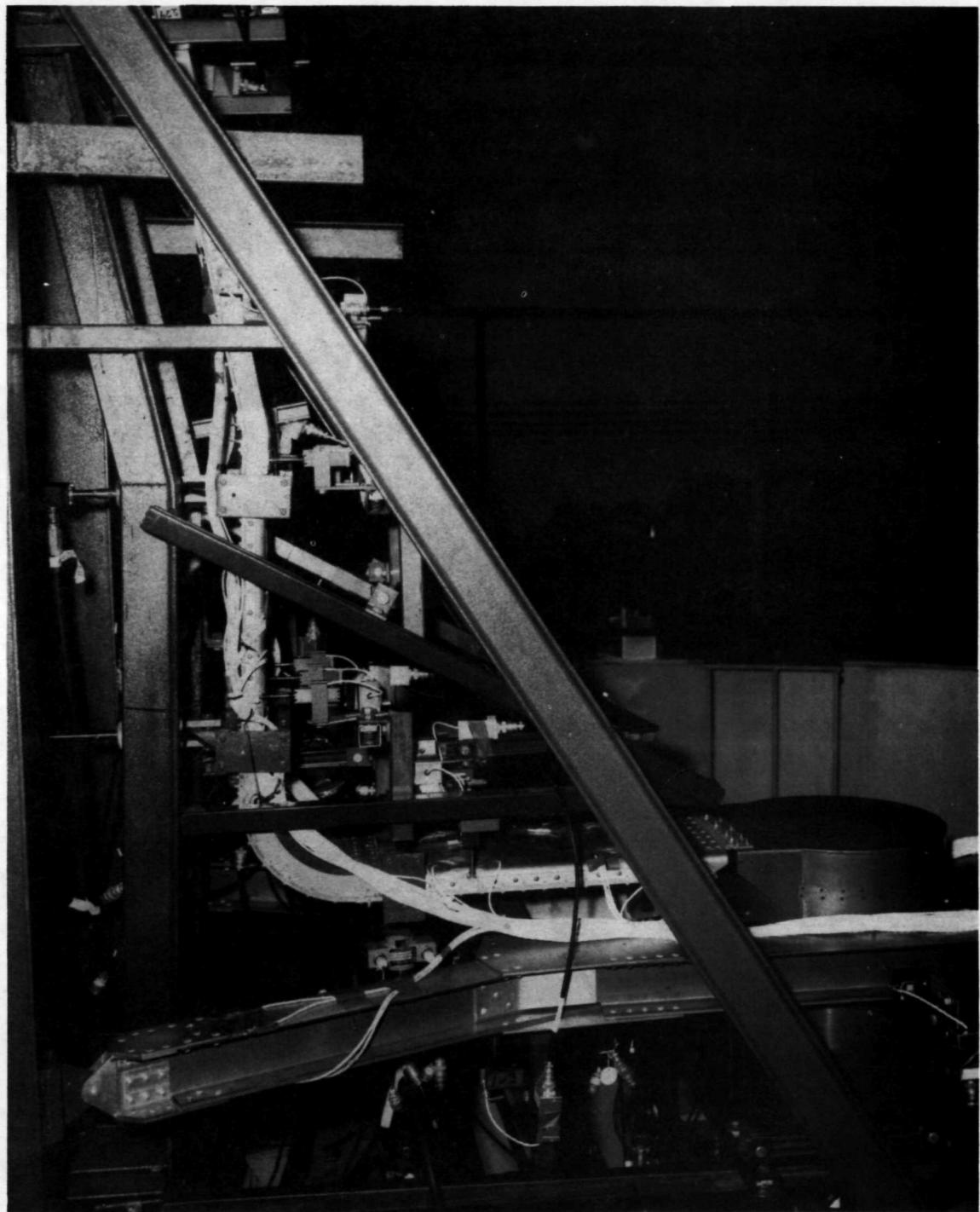


Figure 3. Test setup, side view.



Figure 4. Test setup, view from outboard side.

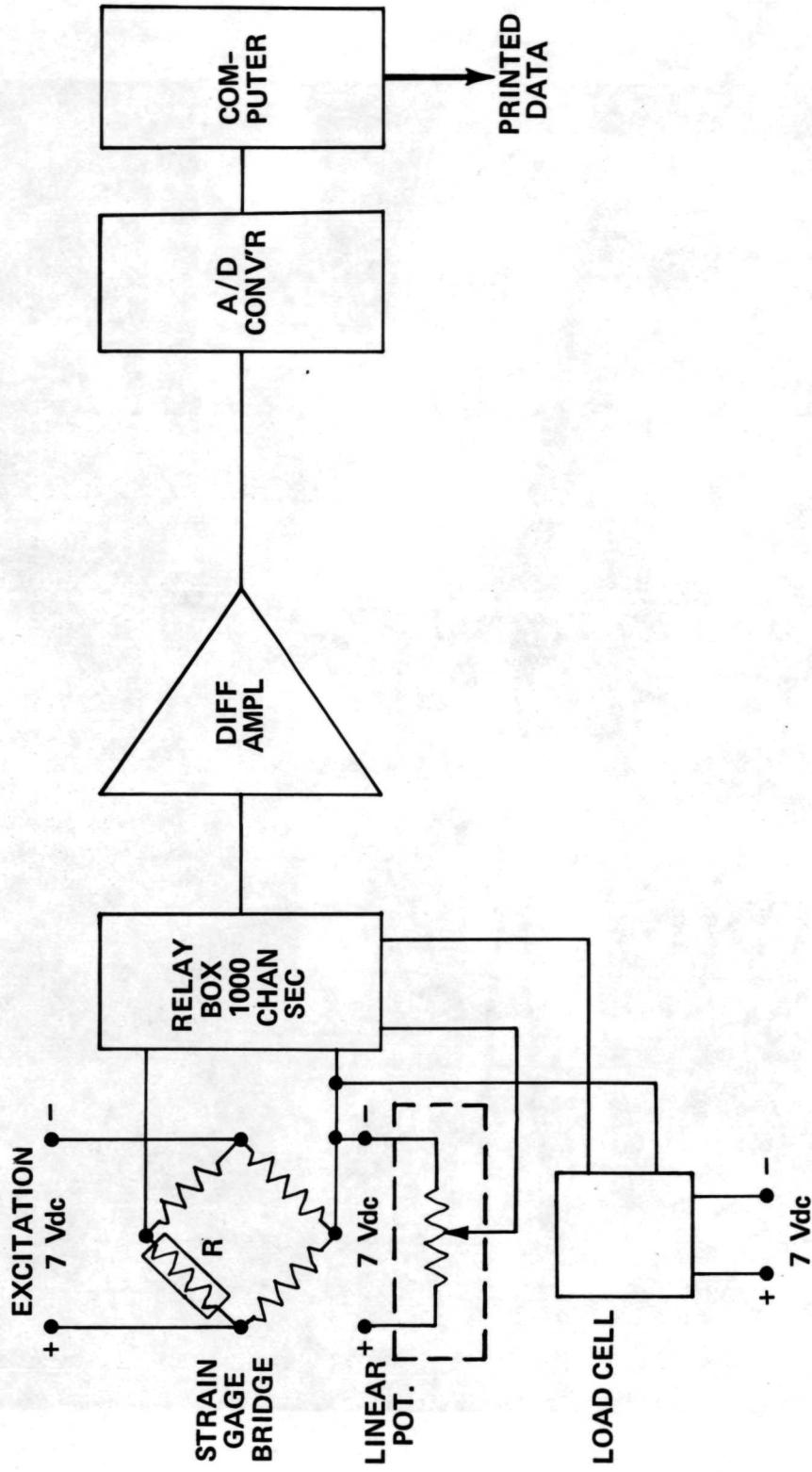


Figure 5. Data system block diagram.

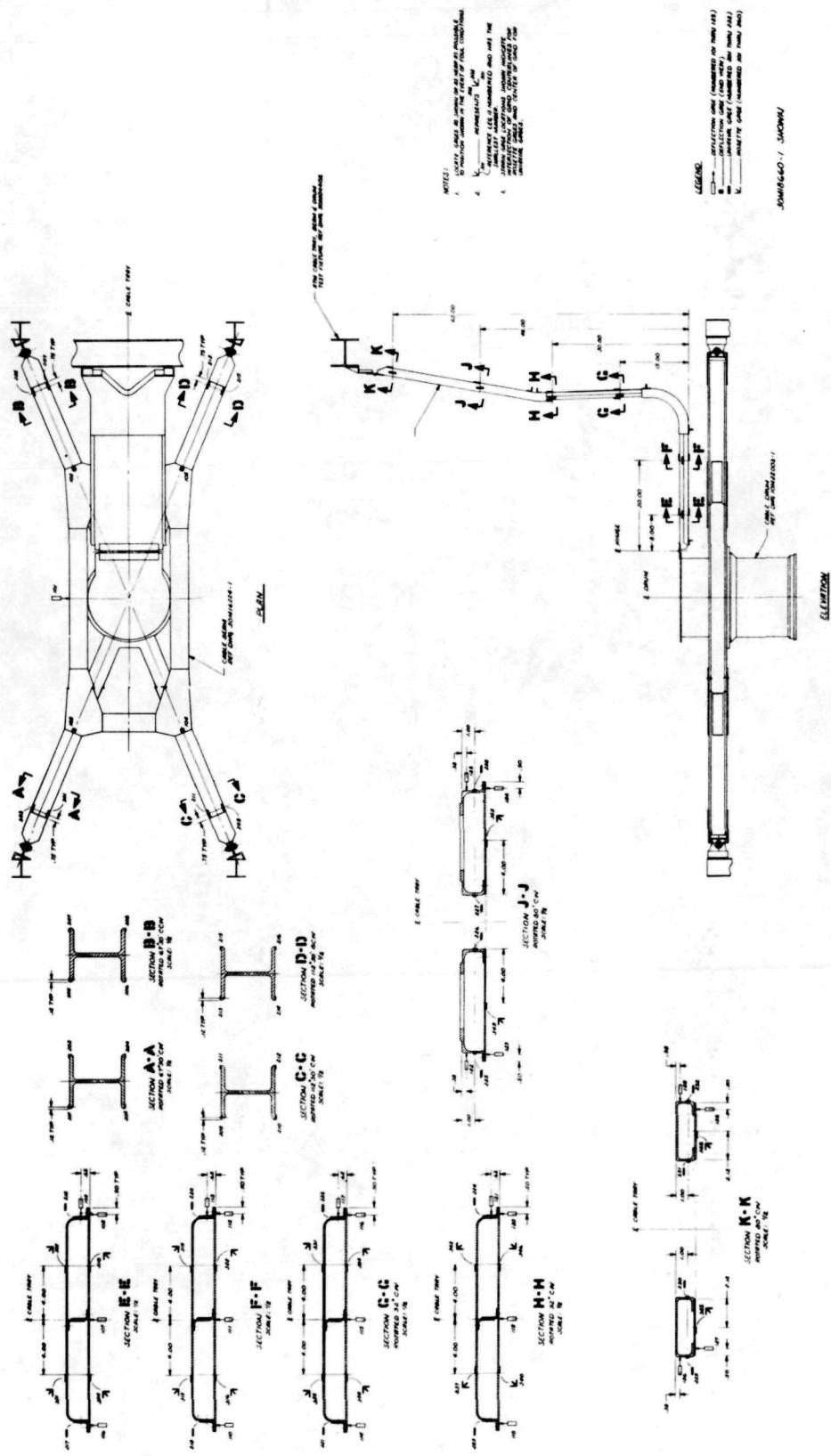


Figure 6. Instrumentation drawing.

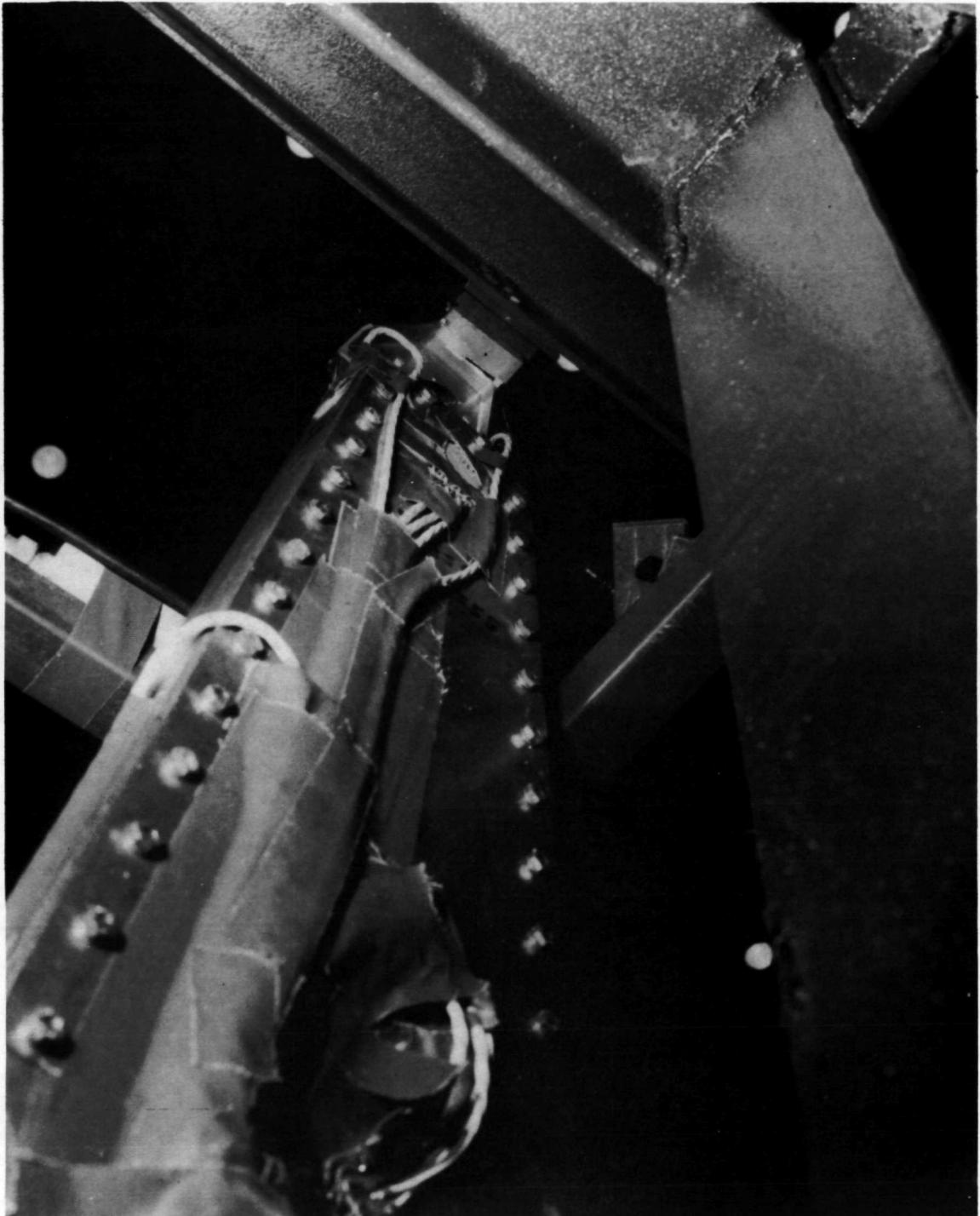


Figure 7. Fitting failure, Case 4, first run.

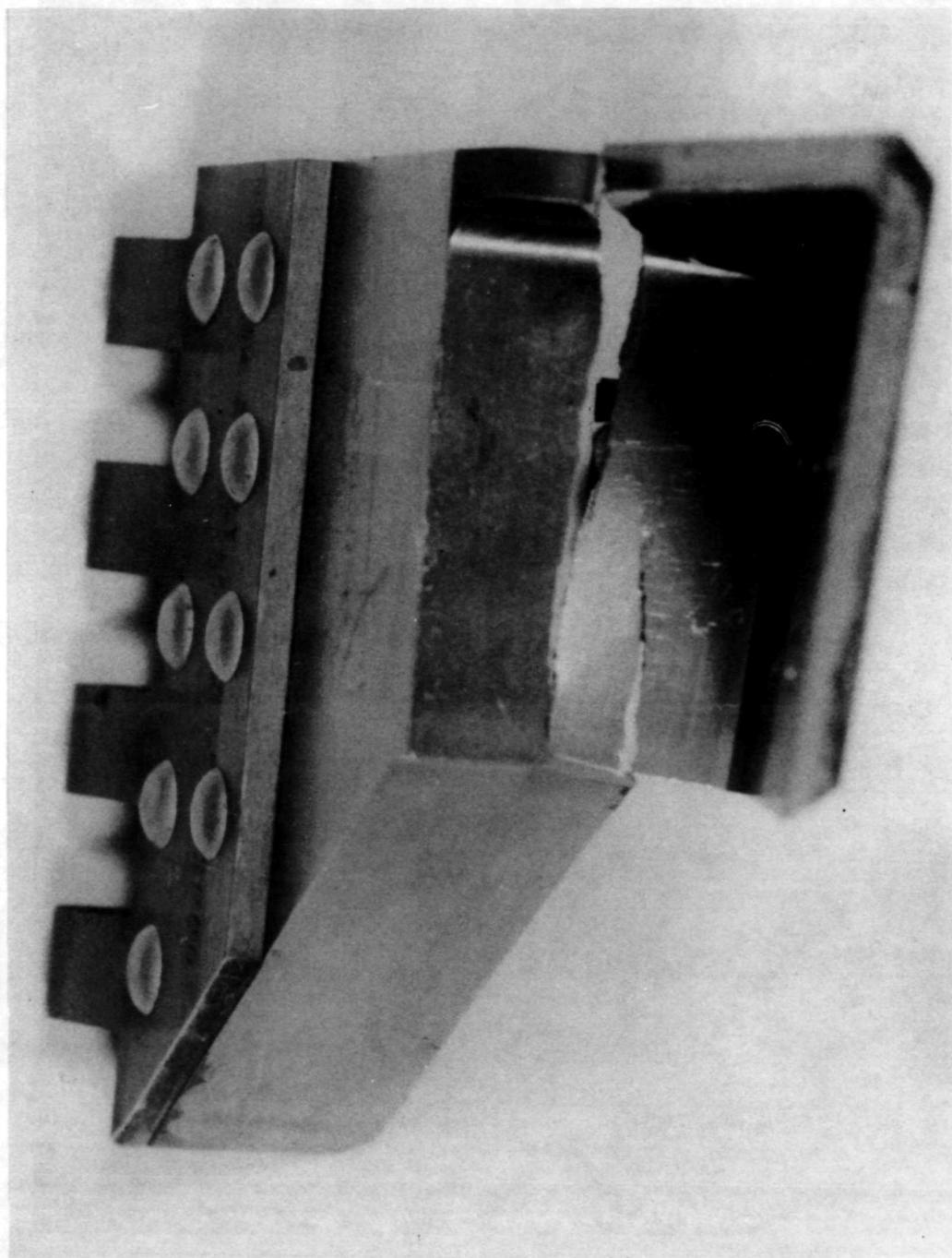


Figure 8. Fitting failure, Case 4, first run.

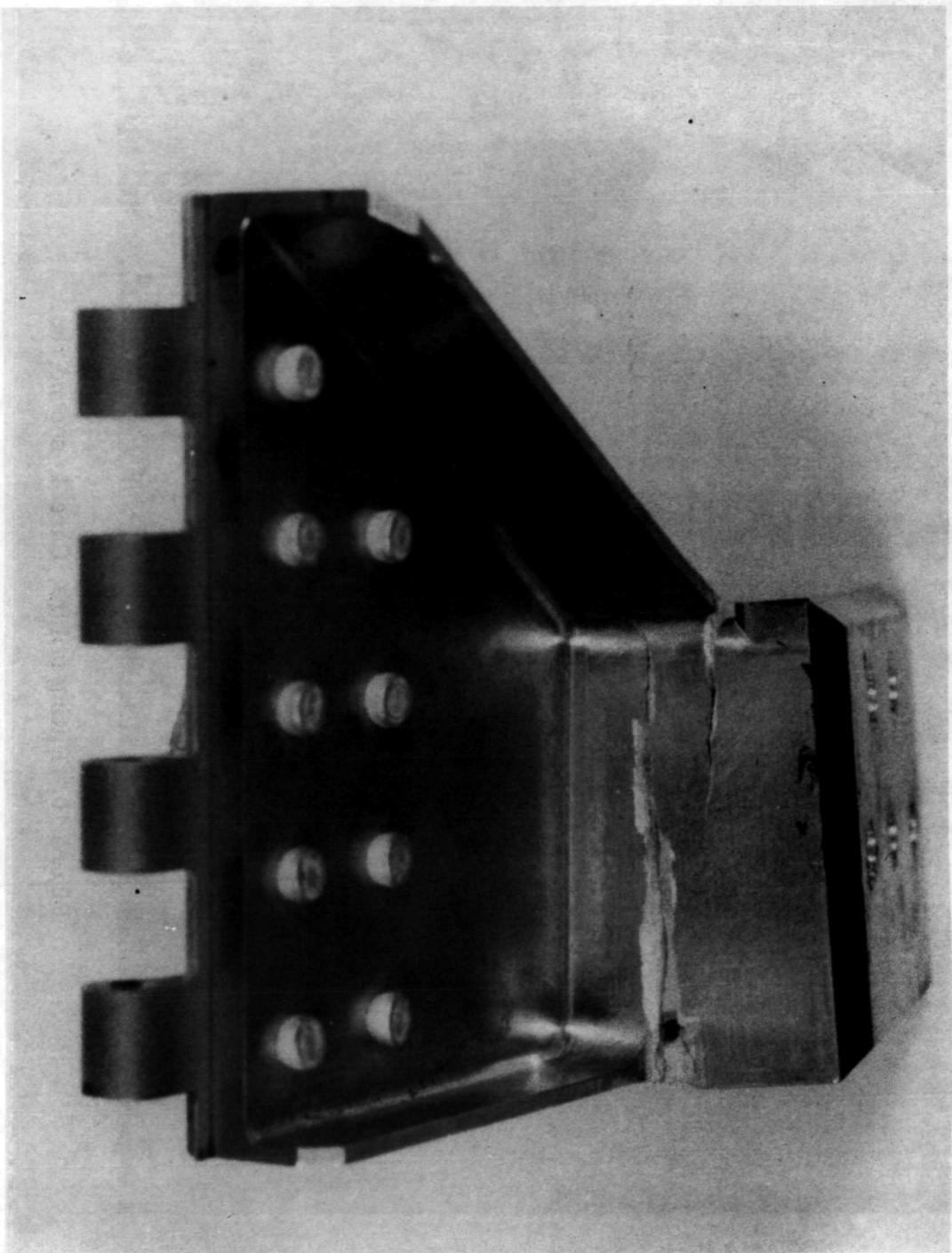


Figure 9. Fitting failure, Case 4, first run.

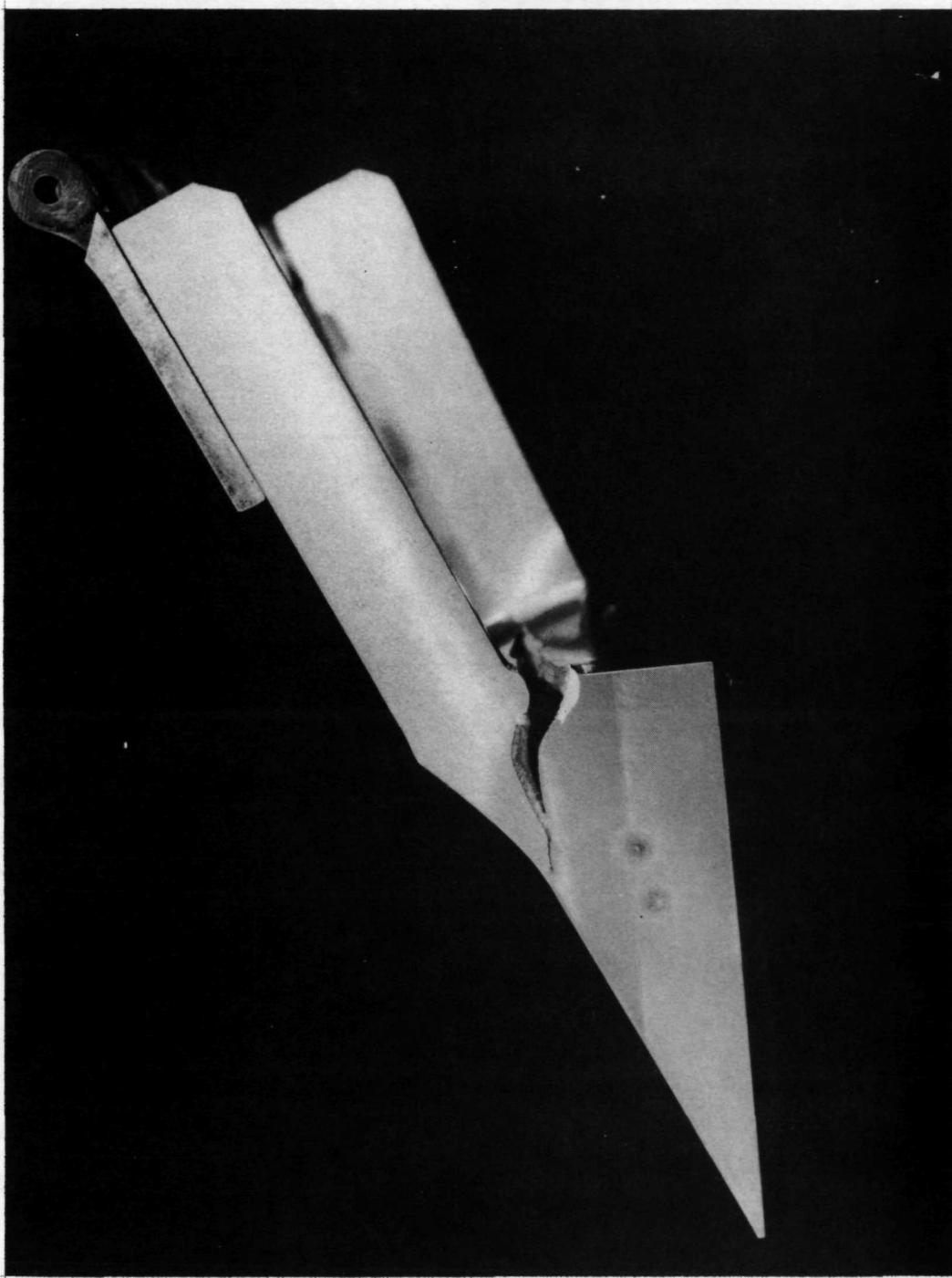


Figure 10. Fitting failure, Case 4, second run.

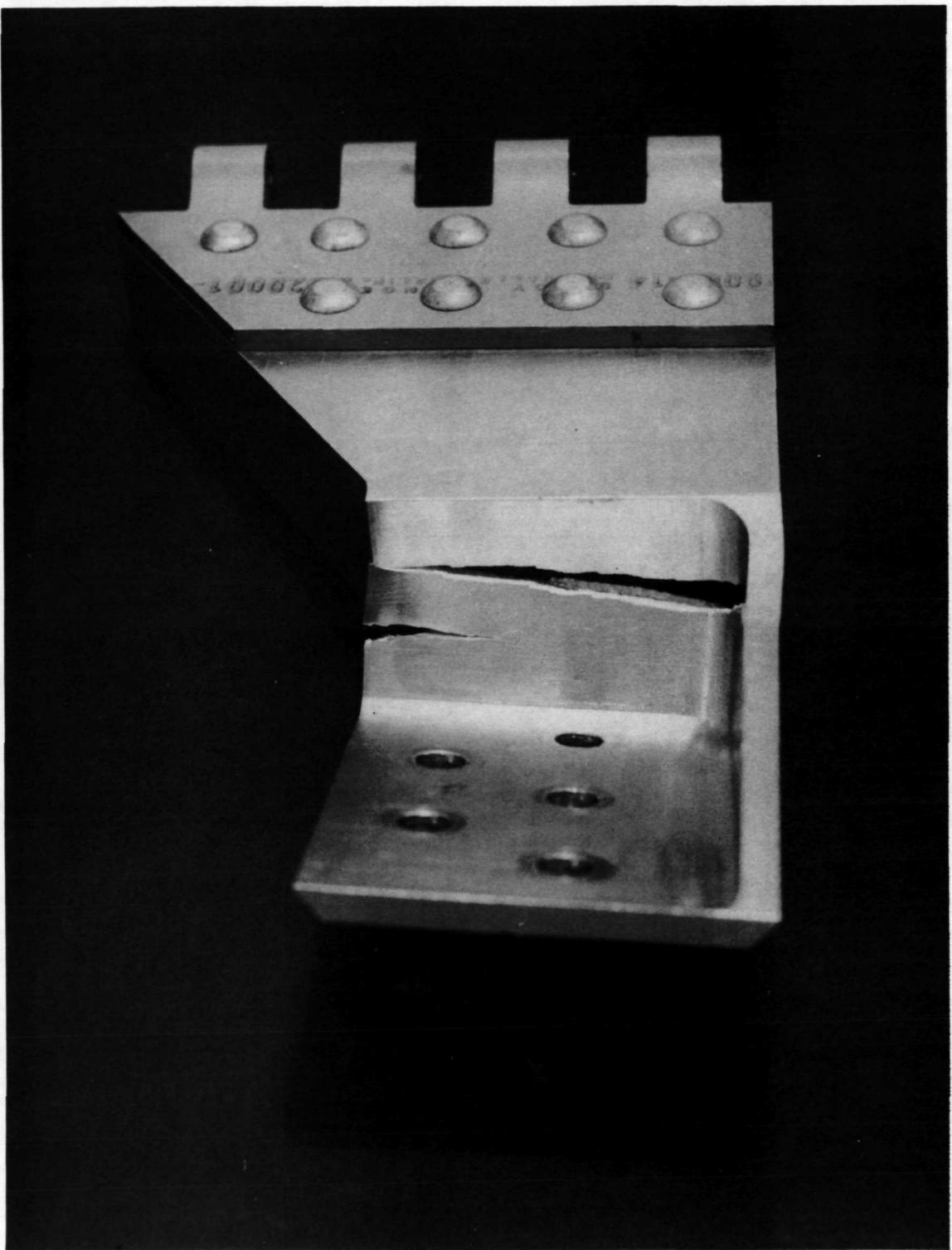


Figure 11. Fitting failure, Case 4, second run.

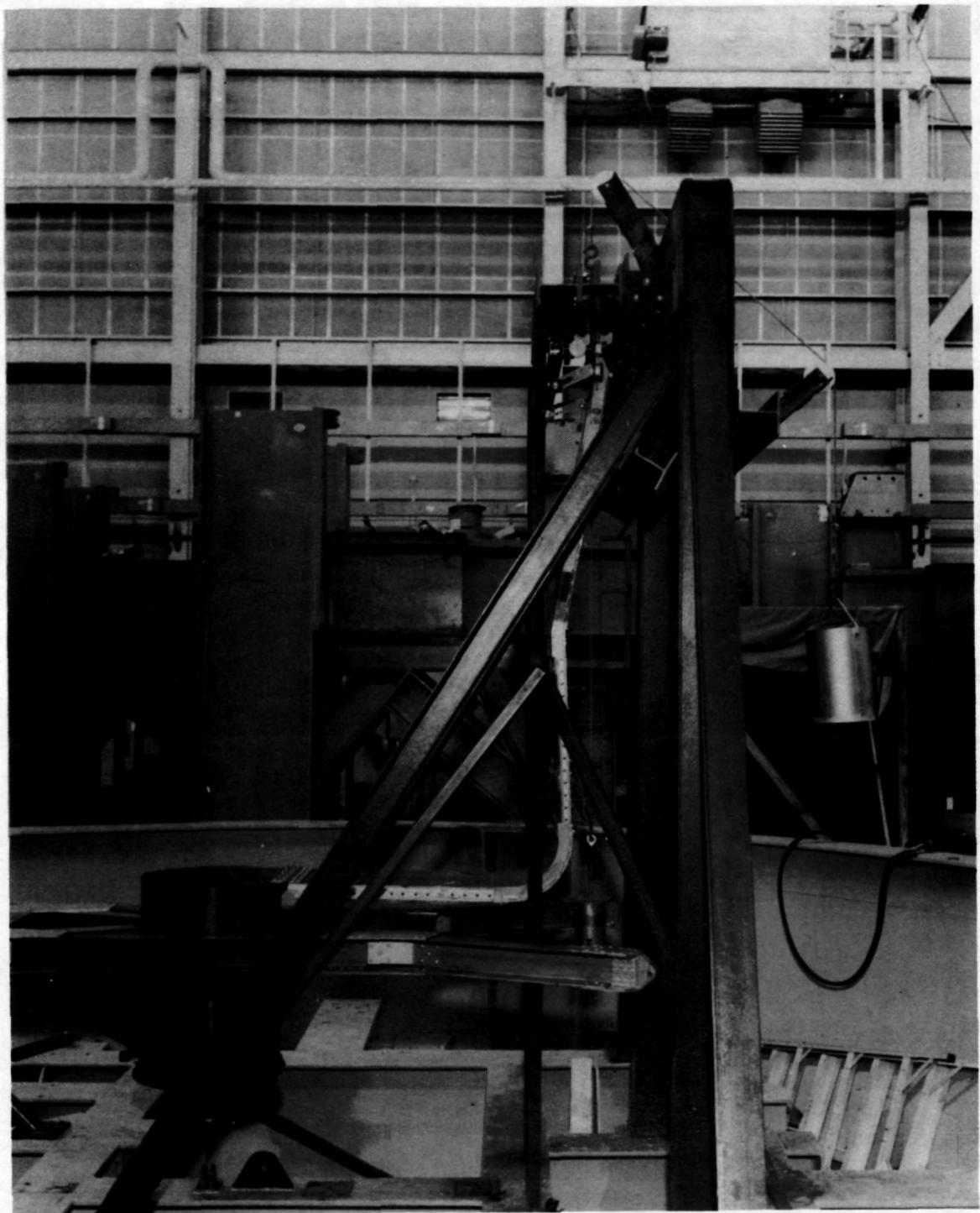


Figure 12. Test setup for arch load deflection tests.

APPROVAL

ATM/CABLE ARCH AND BEAM STRUCTURAL TEST PROGRAM

By John A. Housley

The information in this report has been reviewed for security classification. Review of any information concerning Department of Defense or Atomic Energy Commission programs has been made by the MSFC Security Classification Officer. This report, in its entirety, has been determined to be unclassified.

This document has also been reviewed and approved for technical accuracy.

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